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CHILDHOOD TRAUMA, FAMILY FUNCTIONING AND ADULT HEALTH: PROTECTIVE FACTORS AS MEDIATING VARIABLES

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CHILDHOOD TRAUMA, FAMILY FUNCTIONING AND ADULT HEALTH: PROTECTIVE FACTORS AS MEDIATING VARIABLES

BY

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ABSTRACT

The current study looked at the plausibility of two theories: Social Cognitive Theory and Survivor Theory to explain the interrelationships between childhood trauma, family functioning, protective factors, and adult health. The interrelationships among these constructs were explored with a sample of 451 undergraduate students. Structural equation models revealed that there is a mediational relationship between childhood trauma and health through social support. This relationship was similar for men and women. Cluster analysis and multivariate analysis of covariance revealed that individuals with high levels of all the childhood traumas (physical, psychological, and sexual abuse) have significantly more physical and psychological health problems than individuals who have high levels of only physical and psychological abuse and individuals who have low levels of all the childhood traumas, even when controlling for level of protective factors.

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Numerous children are exposed to a variety of trauma while growing up; trauma such as physical abuse, sexual abuse, psychological abuse and poor family functioning (eg., Whitmire, Harlow, Quina, & Morokoff, 1999). This trauma can have adverse effects on adulthood functioning, specifically physical and psychological health problems. Research has shown that childhood trauma can have long-term psychological and physical consequences (eg., Briere & Runtz, 1989; Browne & Finkelhor, 1986; Fellitti, 1991; Fromuth, 1986; Golding, Stein, Siegel, Burnam, & Sorenson, 1988; Johnson & Harlow, 1996). However not all children exposed to trauma develop physical and psychological health problems. Some victims of abuse appear relatively unharmed, demonstrating asymptomatic, or healthy functioning (Finklehor, 1990). What designates these victims as being different from those who develop problems? From a research standpoint, identifying these factors can lead researchers to develop better assessment and intervention strategies in dealing with trauma. From a practice standpoint, identifying what factors lessen the impact of trauma on health can guide psychologists/therapists to develop better ways to help their clients. This research is focused on what factors mediate the link between childhood trauma and health outcomes as adults.

Prior research has shown that young people can overcome risk-inducing environments to live healthy, functional lives (e.g., Browne & Finkelhor, 1986; Garmezy, 1981; Werner, 1988). These individuals are usually called invulnerable or resilient. Resiliency can be defined as a characteristic or a set of characteristics equated with managing reasonably well in the face of known risk factors for developmental impairment (Liem, James, O'Toole, & Boudewyn, 1997). These

characteristics, usually called protective factors, that make up resiliency can buffer the effects of trauma and help individuals lead healthy lives. Extensive research has identified protective factors associated with the capacity to rebound in the face of adversity (e.g., Rutter, 1993; Werner, 1988,1989). These protective factors fall into three broad categories: *individual factors* such as intelligence, pleasant temperament, and high self-esteem; *family factors* such as caring and cohesion; and *external support systems* such as teachers or religious institutions (Garmezy, 1991; Masten & Garmezy, 1985). Rutter (1987) states that these protective factors are often associated with a greater likelihood for a wide range of adaptive outcomes, especially for people with histories of adversity.

Theoretical Framework

Theory of Cognitive Adaptation

Shelly Taylor developed the Theory of Cognitive Adaptation in 1983. It is a theory that takes into account mediating factors to explain the link between life stresses and psychological health. This theory explains how people adapt to life threatening events and trauma. In her sample of breast cancer patients, Taylor found that positive illusions were adaptive in the face of illness. Those women who felt positively about themselves and their situation were psychologically healthier. Cognitive Adaptation Theory has three basic principles: (1) search for meaning in the experience, (2) attempt to regain mastery over the event and their lives, and (3) effort to restore self-esteem through self-enhancing evaluations. The search for meaning deals with individual's need to understand why this illness/trauma has happened to them and how this illness/trauma will impact them. They attempt to construct causal attributions as

to how/why this has happened to them and how it will impact their future. Regaining mastery involves the individuals seeking to regain control over their illness/trauma and their lives. Here they attempt to prevent the trauma from happening again and/or managing its effects on their lives. Restoring self-esteem deals with individuals attempting to make themselves feel better about themselves and their situation. All of these principles enable people to cope better with their illness/trauma. Taylor and others (2000) also showed that these mediators have an impact on physical health as well. In their longitudinal study of HIV infected men they found that those who found a sense of meaning in their lives after suffering the loss of a loved one had a lower decline in T cells and were less likely to die during the follow-up. Taylor showed that these factors are health protective.

Survivor Theory

Another theory that can explain why protective factors can minimize the impact of childhood trauma is Survivor Theory. Gondolf and Fisher (1988) developed Survivor Theory as an alternative to learned helplessness. Learned helplessness (Seligman, 1975; Walker, 1979) states that women who are victims of violence tend to "give up" in the course of being abused. They suffer from a psychological paralysis that causes them to suffer from a myriad of physical and psychological problems. Women exhibiting learned helplessness have low self-esteem, self-blame, guilt, and depression. They also fail to seek help for their problems. Survivor Theory on the other hand asserts that women who have suffered from abuse are active survivors rather than helpless victims (Gondolf & Fisher, 1988). Instead of failing to seek help for the abuse, abused women instead are seen as increasing their help seeking after

experiencing violence. As the violence in their lives increase, their help-seeking behavior increases. Women who have experienced violence seek support from family, friends, community members and also within themselves through spirituality and faith. This survivor tendency that is seen in women who have suffered from abuse is more than just them asserting themselves, it is more like self-transcendence (Frankl, 1959). The women have an inner strength or a will to live that supercedes their adversity. This strength pushes them to go on and become resilient. They seek out support from a variety of mediums to help them overcome their trauma and become healthy, resilient adults. This support helps lessen the effects of trauma on healthy functioning.

Childhood Trauma & Poor Health Outcomes

Physical Health

Previous research has shown that life stressors, such as childhood trauma, increase susceptibility to infectious disease (e.g., Cohen, Tyrrell, & Smith, 1993; Cohen & Williamson, 1991; Graham, Douglas, & Ryan, 1986). Individuals who have histories of abuse as children have more physical health problems as adults than individuals who do not have histories of abuse (Cunningham, Pearce, & Pearce, 1988; Read, 1999; Thakkar & McCanne, 2000). Many studies have shown that their are a number of long-term problems for women who have a history of victimization (e.g., Golding, 1999; Johnson & Harlow, 1996; Koss & Heslet, 1992). Chronic pelvic pain, premenstrual syndrome, gastrointestinal symptoms, and other negative health behaviors such as eating disorders and substance abuse are reported at a higher rate in victimized versus non-victimized women (Coker, Smith, Bethera, Remsburg, & McKeown, 1999; Mitchell, 1998). Koss, Koss, and Woodruff (1991) found that

women who have been victimized perceive their health less favorably, experience more symptoms across virtually all body systems (except skin and eye), and report higher levels of injurious health behaviors such as smoking or failure to use seat belts than women who have not been victimized. Even the common cold is seen more often in individuals with abuse histories compared to individuals with no abuse histories. Cohen et al. (1993) investigated the relationship between stressful life events and development of the common cold. Participants were exposed to one of five cold viruses or a placebo. Stressful life events were found to be associated with increased susceptibility to colds and increased symptoms among participants.

All types of violence: physical, psychological, and sexual abuse, have been found to increase physical health problems in adulthood. Coker et al. (1999) investigated the relationship between psychological violence, physical violence and physical health. Of the 1,152 women they surveyed, over 50% had ever experienced some type of violence and 13% had experienced psychological (non-physical) violence. Women who experienced psychological violence experienced problems such as chronic pain, migraines, vision problems, stomach ulcers and other major health problems. Women who experienced physical violence also had significantly more health problems than those women who had never experienced violence. Individuals who have been sexually abused suffer from numerous long-term physical health problems as adults. Common illnesses found among victims of childhood sexual abuse include irritable bowel syndrome, chronic pelvic pain, headaches, and pain syndromes (Berkowitz, 2000).

Psychological Health

Research has shown that abuse histories are related to the development of psychological health problems as adults. In a study by Cummins, Ireland, Resnick, and Blum (1999) childhood physical and sexual abuse were correlated with poor emotional health in females. Jaffe, Wolfe, Wilson, and Zak (1986) investigated the relationship between emotional and physical health problems and abuse in women residing in a shelter. They found that women who had been victims of physical abuse had significantly more somatic complaints, a higher level of anxiety, and reported more symptoms of depression than women who had not been victims of physical abuse. The relationship between childhood trauma and adult health seems to be particularly strong for those who were sexually abused. Those who have been sexually abused are more likely to exhibit a variety of symptoms, such as depression, anxiety and poor self-esteem than those that do not have sexual abuse histories (Kendall-Tackett, Williams, & Finkelhor, 1993; Roesler & McKenzie, 1994).

Depression is a common problem of which many individuals who have been abused suffer. Numerous researchers have shown a link between negative events during childhood and depression in adults (Cohen, McGowan, Fooskas, & Rose, 1984; Jaffe et al., 1986). In Cohen et al's (1984) study of college undergraduates they found that negative life events was significantly positively related to depression during adulthood. Posttraumatic stress disorder and low self-esteem are also seen more often in individuals with abuse histories (Roesler & McKenzie, 1994). Dissociation is also seen frequently in those with histories of abuse (Roesler & McKenzie, 1994; Sanders & Giolas, 1991). Sanders & Giolas (1991) found that adolescents who had histories of

physical, psychological, and sexual abuse as well as child neglect had higher levels of dissociation than those adolescents who had never experienced abuse.

Utilization of Medical Services

In addition to the acute effects of trauma, victims of sexual and physical assault may suffer from lingering health concerns that lead to either increased or inappropriate use of medical services (Arnow et al., 1999; Berkowitz, 2000; Read, 1999; Resnick, Acierno, & Kilpatrick, 1997). Victims of abuse are more likely to use medical and mental health facilities more often than non-victims. Coker et al. (1999) found that women with histories of abuse had more than five physician visits in the last year. Medical expenses were higher for women who had been severely victimized versus non-victimized women. Walker et al. (1999) found that women who were abused had much higher health care costs than those who were not abused. They found that women who reported any type of abuse or neglect had median annual health care costs that were $97 greater than women who did not report any type of abuse. Costs for health care were even greater for women who had experienced sexual abuse. Women who reported sexual abuse had median annual health care costs that were $245 dollars greater than costs among women who did not report abuse. Walker et al. (1999) also found that women with sexual abuse histories had significantly higher primary care and outpatient costs and more frequent emergency department visits than women without abuse histories. Fellitti (1991) found that 22% of women raped or molested in childhood visited a physician 10 or more times a year compared with 6% of non-victimized women. Golding, Stein, Siegel, Burnam, and Sorenson (1988) looked at sexual assault history and the use of health and mental health services. They found

that the use of both mental and medical health services in the previous six months was significantly greater among women who had a history of sexual assault. A history of sexual assault was a significant predictor of physician visits over and above the effects of other demographic factors such as gender, age and ethnicity.

Family Functioning

Research has shown that negative family relationships can have an impact on physical and psychological health (Beautrais, Fergusson & Shannon, 1982; Franks, Campbell, and Shields, 1992; Papadopoulos, 1995). Criticism by family members is also related to poorer health outcomes. Franks et al. (1992) found that perceived criticism from the family was directly related to depressive symptoms in adults. He also found that poor family functioning was indirectly related to poor health behaviors through depressive symptoms. Those individuals who came from homes with poor family functioning had higher levels of depression and in turn had higher levels of poor health. Lack of cohesion and lack of communication are also related to poor health outcomes. Amerikaner, Monks, Wolfe, and Thomas (1994) explored the relationship between psychological health and perceptions of family interaction and family climate in a college sample. Results showed that those adults who had poor psychological health perceived their families to be less cohesive, they were less satisfied with their families, and perceived worse communication with their mothers than those adults with high psychological functioning.

Positive family functioning is linked to healthy outcomes as adults (Papadopoulos, 1995). Factors such as support from family members, better communication and better family cohesion are liked to good health outcomes. Carbonell, Reinherz, and

Giaconia (1998) found in their teenage sample that teenagers with good health outcomes, such as positive functioning and a sense of well being, had better family cohesion and better communication than those teenagers who had poor health outcomes, such as depression and poor functioning.

Protective Factors and Health

Resiliency

Numerous individuals who have been abused or neglected as children show numerous survival abilities, which many label as resiliency, that enable them to deal with their trauma and led healthy lives as adults (Anderson, 1997; Lam & Grossman, 1997; Werner, 1988, 1989). These resiliency factors such as personal competence, sense of meaning, intelligence, family characteristics have all been shown to be related to positive health outcomes (Hauser, Vieyra, Jacobson, & Wertlieb, 1989; Werner, 1988,1989). Those individuals with higher levels of these resiliency factors tend to have more positive health outcomes than those individuals who exhibit lower levels of these resiliency factors.

One of the largest and most comprehensive studies of resiliency on adulthood functioning is Werner's (1988, 1989) longitudinal study of 698 infants who were born in Hawaii in 1955. Werner monitored the impact of a variety of biological and psychosocial risk factors, stressful life events, and protective factors in participants from birth to age 30. Three out of four of the high-risk infants developed serious learning and/or behavior problems, had delinquency records, and mental health problems as adults. However, she found that one out of four of the high-risk infants developed into competent and resilient adults. Resilient adults were found to have had

the opportunity to establish a close bond with at least one caregiver, whether it was a parent or a substitute parent such as a grandparent or baby-sitter. The majority of the resilient men and women at age 30 considered their personal competence and determination to be their most effective resources in coping with stressful events in their lives.

Lam & Grossman (1997) investigated the relationship of protective factors (resiliency) in a sample of adult women with and without self-reported histories of childhood sexual abuse to current levels of adult psychological and social functioning. They conceptualized resiliency as a combination of 16 self-report variables in the individual, familial, and social domains. They used this combination of self-report variables as a mediating variable between childhood sexual abuse and adulthood functioning. Their results showed that individuals who scored higher on the composite index of protective factors had lower levels of psychological problems. They also found that women with histories of childhood sexual abuse and higher levels of protective factors looked similar in adult adaptation to those women without histories of abuse.

Spirituality

Research has shown that spirituality or faith in a higher power can be a protective factor among children who grew up in high-risk environments. Those individuals who were high-functioning adults saw themselves as more spiritual and drew strength from their spirituality more so than those individuals who were not high-functioning adults (Werner & Smith, 1992). O'Connell Higgens (1994) studied 40 successful adults who suffered from traumatic childhoods. Those individuals who were described as

resilient or high functioning sustained a sense of spirituality or faith. They saw their spirituality as something that helped them live through their adversity. Reinert and Smith (1997) studied women who had experienced childhood sexual abuse. They found that those who were sexually abused scored higher on spirituality than those who were not sexually abused as children. This showed that those who were sexually abused may turn to their faith and spirituality for support (Reinert & Smith, 1997).

In terms of health outcomes, individuals who exhibit higher levels of spirituality tend to have more positive physical and mental health outcomes as adults (Ellison & Levin, 1998; Koenig, 1997; Larson, Swyers, & McCullough, 1998; Musick, Traphagan, Koenig, & Larson, 2000; Thoresen, 1999). Physical health outcomes that were more positive among those who were more spiritual were reduced coronary heart disease, lower blood pressure, and lower mortality. This research has also shown that those individuals who were more spiritually or religiously involved had more positive mental health outcomes; specifically they had higher rates of overall well-being and life satisfaction, lower rates of depressive symptomology. Religion and spirituality also have been shown to be linked to more positive perceptions of health (e.g., Frankel & Hewitt, 1994; Shuler, Gelberg, & Brown, 1994) as well as better recovery from physical illness (Harris, Dew, & Lee, 1995; Spiegel, Bloom, & Kraemer, 1989). Mortality has also been shown to be affected by level of spirituality and religious activity (House, Robbins, & Metzner, 1982; Musick et al., 2000). Those individuals who had higher levels of spirituality or who self-reported more religious activity had significantly lower mortality rates than those who had low levels of spirituality or self-reported little or no religious activity.

There have been a number of qualitative studies that have investigated the relationship between trauma, spirituality and health. Hage (1998) interviewed battered women residing at a shelter about their abuse histories and what they felt helped them survive them. She found that many of the participants said that faith in God or a sense of spirituality was highly related to surviving the abuse that they went through. Many of the women stated that an active prayer life helped them survive the trauma and violence. Morrow (1998) found that spirituality was a common theme that emerged in her qualitative study of resilient women. All the women in her focus groups felt that spirituality had a great impact on their functioning as adults; they all felt it was a major influence on their lives. In her study on resilient African-American women, Brodsky (1999) found that spirituality was an important resource for many of the women she interviewed. Spirituality was seen as an essential ingredient to 'making it'.

Social Support

There has been much research on the relationship between social support and healthy outcomes in adults. Cummins et al. (1999) studied the risk and protective factors among Native American youth that are correlated with both physical and emotional health. For females, one of the strongest correlates of emotional health was a feeling of connectedness to school. Support from educators was strongly predictive of emotional health. Research has shown that for children of alcoholics, those who have mentors are better able to function as adults (O'Sullivan, 1991). The presence of an adult who takes an interest in the child can have a distinct effect on the later functioning of that child as an adult. The study suggests that an adult mentor may enable the child to be more trusting, to be more inner directed, and to make more and

deeper friendships. In her longitudinal study of infants, Werner (1992) found that healthy resilient children tended to rely on peers and elders in the community as sources of emotional support. Favorite teachers were also found to be positive role models.

Support from family members and peers have also been shown to have an impact on health outcomes. Licitra-Kleckler and Waas (1993) studied adolescents who were experiencing elevated levels of stress. They found that adolescents with high perceived family support and high perceived peer support reported lower levels of depression than those with less perceived support from family and friends. Barrera and Garrison-Jones (1992) also found that family and peer support was related to depression. They found in their sample of adolescents that family support was negatively related to depression. Those adolescents with more support from family members showed less depressive symptoms. However they found a positive relationship between peer support and depression.

Gender Differences

Research has shown that there are gender differences in how males and females cope with stressful life events (Matuszek, Nelson, & Quick, 1995; Ptacek, Smith, & Dodge, 1994 Shek, 1992; Werner, 1988). The research shows that females tend to seek help from social networks and males tend to cope with their problems internally. In Ptacek et al.'s (1994) study on coping with stress, they found that women reported seeking social support to a greater extent than men, whereas men reported using more problem-focused coping than women to cope with stress. Werner (1988) found gender differences in how men and women cope with stressful life events. She found that

women draw on a significantly larger number of additional sources of support (faith, prayer, and social support) than men do. Resilient males appeared to rely almost exclusively on their own resources, with some additional support from spouses or parents. They derived emotional support from friends and family less frequently than women. Women also tend to rate other people as being more helpful in dealing with stressful events compared with males (Cohen et al., 1984).

Goals of the Study

This study is designed to investigate the relationship between childhood trauma, protective factors, and health outcomes in adults. A key goal is to ascertain whether or not these protective factors: spirituality, social support, and resiliency, act a mediators in the relationship between childhood trauma and health outcomes as adults. There has been much research looking at the different types of childhood abuse on health and the relationship between protective factors and health (Briere & Runtz, 1990; Coker et al., 1999; Fromuth, 1986; Lam & Grossman, 1997; Liem et al., 1997), but thus far there have not been many research studies that have looked at multiple trauma (physical, psychological, sexual, and family functioning), multiple protective factors (resiliency, spirituality, and social support) and multiple health outcomes (physical and psychological). This multivariate research will be able to give readers a larger picture of the interrelationships among these constructs. This research is not only using multiple constructs but also multiple methods and multiple samples. Another key goal is to ascertain whether or not there are differing health outcomes depending on level of childhood trauma. Knowledge of the differing impact of certain traumas will enable practitioners and physicians to tailor their interventions and treatments.

Hypotheses

1) There will be significant indirect relationships between childhood trauma and health outcomes (physical and psychological) through the protective factors (resiliency, spirituality, and social support).

2) There will be significant indirect relationships between family functioning and health outcomes (physical and psycholgical) through the protective factors (resiliency, spirituality, and social support).

3) Those individuals with higher levels of childhood trauma will have higher levels of physical and psychological health problems, after controlling for level of protective factors.

4) The relationship between social support and health outcomes will be stronger for females than for males.

METHODS

Participants

A total of 451 participants from the University of Rhode Island participated in the current study. Participants were recruited from 2 sources: Psychology courses and on-campus fraternities. Participants were recruited through courses in psychology (Introductory, Personality, Social, and Quantitative Methods), which provided students with partial course credit or extra credit for participation in research. All on-campus fraternities were solicited with phone calls and letters detailing the study. Four fraternities requested surveys, though participants from only two fraternities (N = 28) returned completed surveys. All participants were entered into a drawing for one of two $50 cash prizes. Data from participants from the psychology courses and the

fraternities was merged and analyzed together. The sample comprised of 110 males and 341 females, all of which were 18 years or older. Guidelines of the Institutional Review Board at this University were followed.

Participation was completely voluntary and participants had the opportunity to withdraw at any time. All surveys were collected anonymously. The findings are presented with statements about groups of participants with no specific information on any individuals. Table 1 depicts demographic characteristics of the total sample, females only, and males only. Overall, the sample was largely reflective of female (76%), white (89.7%), single (98%), first-year (50.3%) and on-campus (65.1%) students. The average age was 18.9 (SD =1.90), ranging from 18 to 44; 46.2% came from a family with an average income over $50,000.

Insert Table 1 about here

Procedure

Participants were asked to fill out a 10-page, 233 question survey. Students in various psychology courses were asked to sign up for a convenient designated one-hour time period (outside of class) in order to fill out the informed consent (See Appendix A) and the survey. Fraternities were solicited by telephone and mail. Participants were handed the informed consent and asked to sign it if they chose to participate. As an incentive to participate in the study, the students were told that once they completed the survey, they would be placed in a drawing in which they could win 1 of 2 $50 cash prizes. Participants were instructed to fill out the contact information at the bottom of the consent form if they wished to participate in the drawing. Once

participants signed the consent forms, the surveys were handed out. Following completion of the survey, participants were given a signed slip of paper confirming that they participated in the research, which they could give to their professor to verify participation. Participants were also given a debriefing sheet (See Appendix B), detailing the study's purposes and procedures as well as contact information if they wanted information regarding the results of the study upon completion.

For the factor and reliability analyses, a random sample of 200 female participants was selected. For the cluster analyses the random sample was used as well as a sub-sample of 220 participants (110 males and 110 females). All other analyses were done using the full (N = 451) sample.

Measures

The survey is composed of 11 sections (See Appendix C for a complete version of the survey), each measuring a different major construct within the design. The survey was designed using Teleforms software (Cardiff Software), which allows surveys to be scanned into a computer and allows the data to be placed directly into a predetermined database. All but the Physical Health sections were measured using an established scale with acceptable reliability. Some of the scales (see details below) have been adapted for the purpose of this study. Each scale's reliability was assessed prior to performing any other analyses.

Section 1 (Family Functioning)

The Family Functioning Scale is a 52-item scale developed by Tavitian, Lubiner, Green, Grebstein and Velicer (1987). This scale measures an individual's perceptions of family functioning. The scale consists of five factors: (1) *Positive family affect*, (2)

Family Communications, (3) *Family Conflicts*, (4) *Family Worries*, and (5) *Family Rituals*. Prior to the beginning of this study it was decided to use only the first three factors since they measured both positive and negative aspects of family functioning as well as having acceptable reliability. This section comprised of 23 questions that represented the three above factors. Respondents had a choice between a) never b) almost never or rarely c) sometimes d) frequently or almost always or e) always. Some sample questions are: "My family accepts me as I am," and "Our family spends holidays together." Factor analysis on this scale revealed three factors with an overall scale reliability of .74. Reliability for the individual factors were as follows: Positive Family Affect (.88), Family Communications (.82), and Family Conflicts (.81).

Section 2 (Health-Related Problems)

This section of the survey consisted of seven questions, which assessed the utilization of health care and various health-related problems in the past year. The researcher developed this scale. The questions began with the general statement; "In the past year how often have you done the following:" Respondents had a choice from a) never b) 1-2 times c) 3-4 times d) 5-6 times or e) 7+ times. Sample questions are: "Visited the emergency room," and "Missed school/work because of illness." After performing factor analysis and assessing reliability, it was decided to use only the first four questions of this section in future analyses. These four questions assessed health visits in the past year. The reliability of this scale was somewhat low (.63).

Section 3 (Resiliency)

The Resilience Scale is a 25-item scale that was developed by Wagnild & Young (1993). This scale measures characteristics that moderate the negative effects of

stress. The scale consists of two factors: (1) *Personal Competence* and (2) *Acceptance of Self & Life*. Respondents had a choice between a) strongly disagree b) disagree c) agree or d) strongly agree. Some sample questions are: "I can be on my own if I have to," and "My life has meaning." For this study 2 factors were revealed with an overall reliability of .87. Reliability for the Personal Competence factor was .85 and .68 for the Acceptance of Self & Life factor.

Section 4 (Community Support)

This scale was developed based on the Social Support Behaviors Scale, which is a 45-item scale that was developed by Vaux, Riedel, and Stewart (1987). The Social Support Behaviors Scale assesses for modes of social support from family and from friends. The questions for this scale were modified to assess for modes of social support from community members. Respondents had a choice from a) no one would do this b) someone might do this c) someone would probably do this d) someone would certainly do this or e) someone most certainly would do this. Questions began with the general statement, "How likely would members of your community help you out when you had a problem, in each of the specific ways below:" Sample questions are: "would comfort me if I was upset," and "would tell me who to talk to for help." Factor analysis revealed one factor with an internal consistency of .96.

Section 5 (Spirituality)

The Spiritual Involvement and Beliefs Scale (first revision) is a 39-item scale that was developed by Hatch (personal communication, Hatch, 1999). It is based on the original Spiritual Involvement and Beliefs Scale which was developed by Hatch, Burg, Naberhaus, & Hellmich (1998). As far as this author knows there is no know factor

analysis or reliability for this revision. This scale measures individual's spiritual involvement as well as spiritual beliefs. For this study all but the last question was used. The question was discarded because it had its own unique response choice and was deemed unimportant for the purposes of this study. Respondents had a choice from a) strongly disagree b) disagree c) agree or d) strongly agree for the majority of the questions. For the rest of the questions, respondents had a choice between a) never b) sometimes c) usually or d) always. Some sample questions are: "A spiritual force influences the events in my life," and "I depend on a higher power." Factor analysis revealed two factors with an overall reliability of .94. The reliability of the two individual factors were as follows: Spiritual Involvement (.96) and Connection to Others (.53).

Section 6 (Physical Health Problems)

This section contained questions that dealt with how often participants had certain illnesses/conditions in the past year. The researcher developed this scale. The questions began with the general statement, "In the past year, how often have you had any of the following illnesses/conditions." Respondents had a choice from a) never b) 1-2 times c) 3-4 times d) 5-6 times or e) 7+ times. Sample questions are: "common cold," and "urinary tract infection." Factor analysis revealed one factor. The reliability of the scale was .82. There was also one additional question in this section, which assessed physical health perception. Respondents had a choice from a 4-point scale from Poor to Excellent. The question asked, "In general, my physical health is:". This item was used as the construct Health Perception in further analyses.

Section 7 (Psychological Health)

Psychological Health was measured using the Trauma Symptom Checklist, which was developed by Briere & Runtz (1989). The scale was designed to assess the impact of childhood abuse on later (adult) functioning. The scale consists of five factors: (1) *Dissociation* (2) *Anxiety* (3) *Depression* (4) *Post-Sexual Abuse Trauma* and (5) *Sleep Disturbance*. Respondents had a choice from a) never b) occasionally c) fairly often or d) often. The questions began with the general statement, "In the past year, how often have you experienced the following:" Sample questions are: "feeling isolated from others," and "desire to physically hurt yourself." Reliability for the entire scale was .91. The internal consistency of the individual factors were as follows: Dissociation (.75), Anxiety (.73), Depression (.77), Post-Sexual Abuse Trauma (.67), and Sleep Disturbance (.71). There was also one additional question in this section, which assessed psychological health perception. Respondents had a choice from a 4-point scale from Poor to Excellent. The question asked, "In general, my mental health/emotional well-being is:". This question was not used in further analyses.

Section 8 and Section 9 (Family and Peer Support)

To assess Family and Peer Support the Social Support Behaviors Scale, which is a 45-item scale that was developed by Vaux, Riedel, and Stewart (1987). The Social Support Behaviors Scale assesses for modes of social support from family and from friends. The scale is made up of 5 factors: (1) *Emotional* (2) *Socializing* (3) *Practical Assistance* (4) *Financial Assistance* and (5) *Advice/Guidance*. For this study, questions from the *Emotional* and *Advice/Guidance* were used to assess social support from family and friends. Respondents had a choice from a) no one would do this b)

someone might do this c) someone would probably do this d) someone would certainly do this or e) someone most certainly would do this. Questions began with the general statement, "How likely would (member of your family, or your friends) help you out when you had a problem, in each of the specific ways below:" Sample questions are: "would comfort me if I was upset," and "would tell me who to talk to for help." For each section, factor analysis revealed one factor. The internal consistency for Family Support was .97 and .96 for Peer Support.

Section 10 (Childhood Trauma)

This section consisted of two scales. To assess Physical and Psychological Abuse, The Revised Conflict Tactics Scale (Straus, Hamby, Boney- McCoy, & Sugarman, 1996) was used. This scale measures the extent of physical and psychological abuse over the past year. Because this research is focused on abuse throughout childhood and not just in the past year, the scale of measurement that was used was based on how often the types of assaults occurred before the participant was 18 years old. The questions began with the general statement, "Before you were 18 years old, did anyone ever do the following:" Respondents had a choice between a) never, b) once, c) a few times, or d) many times. One additional question, "cause some other type of bodily injury", was also used to assess Physical Abuse. Two additional questions, "treat you like you were stupid," and "blame you for their problems", were also used to assess Psychological Abuse. Factor analysis revealed two factors. The internal consistency of the entire scale was .93. The reliability of the individual factors were as follows: Physical Abuse (.88) and Psychological Abuse (.90). The second scale in this section was used to assess sexual abuse. The Childhood Sexual Abuse scale

(CSA) was adapted from Wyatt (1985). The scale consists of 7 items, which measure sexual abuse before the age of 18. The questions began with the general statement, "Before you were 18 years old, did anyone ever do the following:" Respondents had a choice between a) never b) once c) a few times or d) many times. The scale consists of three factors: (1) *Exhibitionism*, (2) *Touching*, and (3) *Sexual Intercourse*. Factor analysis revealed three factors with an internal consistency of .92. The reliability of the individual factors were as follows: Exhibitionism (.83), Touching (.89), and Sexual Intercourse (.90). It was decided to use the entire scale as one factor in further analyses. This was done because the focus of this investigation was on sexual abuse, and the other traumas (physical and psychological), as a whole instead of focusing on specific indicators of abuse. Additional questions in this section were used to assess number of times abuse occurred, age when abuse began, age when abuse stopped, who abused you, and who you told of the abuse.

Section 11 (Demographics)

This section of the survey consists of 11 questions that ask about background characteristics of the participants. Questions such as age, gender, ethnicity, socio-economic status, and religion of the participant are asked.

Factor loadings and reliability of all the constructs in both a random sample of 200 females and the entire sample are depicted in Tables 2 and 3.

Insert Tables 2 & 3 about here

Overall means and standard deviations for all latent constructs can be found in Table 4. Correlations among the latent constructs can be found in Table 5.

Insert Tables 4 & 5 about here

Analyses

The analyses for this study were conducted in five phases. *Phase I* consisted of factor analyzing the major constructs of the study (Childhood Trauma, Family Functioning, Resiliency, Spirituality, Social Support, Physical Health, and Psychological Health). Also in this phase, reliability estimates were calculated for each construct in this study. *Phase II* examined gender differences among all the latent constructs using both Pearson Product Moment Correlations and multivariate analyses of variance (MANOVAs). *Phase III* consisted of the analysis of a number of cross-sectional structural equation models for male and female participants separately to determine which was the best model for understanding the interrelationships among the latent constructs as well as to determine if there were different patterns of interrelationships between men and women. *Phase IV* consisted of the analysis of a number of cluster analysis solutions on the Childhood Trauma and Family Functioning variables to determine which cluster solution best fit the data. *Phase V* examined cluster differences to determine if there were differences among the latent dependent constructs between the groups while also controlling for the various protective factors (Resiliency, Spirituality, Social Support). Multivariate analyses of co-variance (MANCOVAs) and post-hoc tukey tests were used to assess this.

Phase I (Preliminary Analyses)

The first set of analyses conducted began with the principal axis factoring (PAF) of each scale involved in the study with a random sample of 200 females. Then, once the

factors were determined, the analysis was conducted on the entire sample of 451 participants to verify the structure of the factors. The purpose of factor analysis is to discover subsets of variables, that are relatively independent from one another, from a large set of items or variables (Tabachnick & Fidell, 1996). Principal axis factoring is a method which leads to a least-squares solution of initial factoring (Kim & Mueller, 1978). A method of oblique rotation, direct oblimin, was chosen to allow for the correlation among factors. In the current study, the majority of the scales have been used prior and thus the factor analysis was used to further validate the scale. Only two of the scales (Spirituality and Physical Health) had not previously been factor analyzed. Once the scales were factor analyzed using both the random sample and the entire sample, each scale was tested for reliability. Internal consistency was measured using Cronbach Alpha (Cronbach, 1951). Values of .75 or higher are preferred. Factor loadings and reliability of all scales can be found in Table 2 (random sample) and Table 3 (entire sample).

Descriptive statistics were determined for all the constructs and their factors. This included the mean, standard deviation, minimum/maximum, skewness, and kurtosis. Constructs with extreme values of skewness and kurtosis were transformed using logarithmic and square root transformations. The transformation that improved normality the best was chosen and that variable was used in further analyses. Tabachnick & Fidell (1996) recommend transformation of variables in all situations unless there is some reason not to. Severe non-normality can affect estimation of parameters in structural modeling (Harlow, 1985).

Phase II (Gender Differences)

This section examined gender differences among all of the latent constructs in the study. First, Pearson-Product Moment Correlations were conducted on all latent constructs separately for males and females. This was done to determine if the patterns of relationships differed from men to women. Second, seven MANOVAs were conducted, all with sex as the independent variable to see if males and females differed significantly on any of the measured constructs for each of the following latent factors: Childhood Trauma, Family Functioning, Resiliency, Spirituality, Social Support, Physical Health, and Psychological Health. Each dependent variable represented the measured variables for one of the individual latent variables.

Phase III (Structural Equation Modeling)

This section consisted of the analyses of a number of structural equation models conducted separately for males and females to determine which model was the best fit for both male and female participants. Structural Equation Modeling is a quantitative method that combines path analysis and factor analysis (Grimm & Yarnold, 2000). It attempts to find relationships among latent constructs (abstract) rather than manifest (measured) variables. There are two types of latent constructs within a structural equation model, exogenous and endogenous. Exogenous constructs can be thought of as the independent variables; they are not dependent on any other constructs. Endogenous constructs can be thought of as mediating or dependent variables because they are dependent on at least one other construct. All latent constructs in the structural equation model should be made up of multiple measures, ideally at least three measures. A structural equation model contains the relationships between these

two types of constructs, loadings of manifest variables on constructs, and error (measurement and prediction). The purpose of structural equation modeling is to test hypotheses about the relationship among observed and latent variables (Hoyle, 1995). Structural equation modeling does not allow for the exploration of models that best fit the data but rather the fit of models that the researcher specifies. You need to decide on direct and indirect effects and which parameters (a constant that identifies the relationship between variables) will be fixed and free. There are several benefits of SEM including: (1) the use of multiple measures per construct, (2) estimation of both measurement error in the variable and prediction error, (3) examination of both direct and indirect effects, (4) investigation of complex, well-specified theoretical models, and (5) explicit depiction of predictions through the path analysis diagram and the writing of equations (Harlow, 1991).

Maximum likelihood (ML) estimation procedures were the estimation procedure used in this study. Estimation refers to how you will estimate the parameters in your model. Maximum likelihood is the most widely used estimation procedure and has historical preference (Harlow, 1991). It has also been found to be robust against moderate non-normality (Harlow, 1985).

Several indices of fit were calculated to determine appropriateness of model fit. Macro and micro indices of fit were performed. The most common overall index of fit is the Chi-Square goodness of fit test. Macro indices of fit include the Comparative Fit Index (CFI) and the normed fit index (NFI). Micro indices of fit include the Average Absolute Standardized Residuals (AASR) and r-squared. For this study the Chi-Square goodness of fit test, the Comparative Fit Index (CFI: Bentler, 1990), and

Average Absolute Standardized Residuals (AASR: Bentler, 1989) was selected. In order for a model to have good fit, the CFI should be close to 1.0 (the rule of thumb is that it is greater than .90) and the AASR should be <.06. According to Hu and Bentler (1995) the rule-of-thumb to consider models acceptable if a fit index exceeded .90 is an inadequate rule. Based on various Monte Carlo studies they performed they found that the rule-of-thumb does not work equally well with various types of fit indexes, sample sizes, estimators, or distributions. Thus, CFI values greater than .95 would be conservatively preferred.

The independent variables for these models were Childhood Trauma and Family Functioning, both of which had three manifest indicators. The mediating variables for these models were to have been all three protective factors, Resiliency, Spirituality, and Social Support, but due to Resiliency and Spirituality having only 2 manifest indicators it was decided that they would be excluded from these analyses. Therefore, the only mediating variable was Social Support. A model was tested with all three protective factors but it failed to converge (See results section for more detail). The dependent variables for these models were Physical Health, which had three manifest indicators, and Psychological Health, which had five manifest indicators.

Various Structural Equation Models were tested in this study. SEM is best utilized when several models are being tested, rather than just one. This way, the model with the best fit can be determined. In this study, nested models were tested. Models are nested whenever one model has all the same free parameters as does the second model but also has other free parameters not shared by the other model (Maruyama, 1998). In essence the two models are equivalent but in one model certain parameters are fixed

and in the other they are free. A chi-square difference test will tell you whether the omitted paths of a nested model are adding significantly to a model. Based on the theories of Gondolf & Fisher (1988) and Taylor (1983) the models that include mediators, specifically the protective factors, are expected to provide the best "fit". The testing of these models will specifically test hypotheses 1 and 2. In Hypothesis 1, it states that there will be a significant indirect relationship between childhood trauma and health outcomes through the protective factors. In Hypothesis 2, it states that there will be an indirect relationship between family functioning and health outcomes through the protective factors. These models will test whether or not the inclusion of various direct and mediational paths improves model fit. To test Hypothesis 4, which states that the relationship between social support and health outcomes will be stronger for females than for males, it was decided to separate the sample by gender and test all the models on both genders. This will allow for the determination of differences in fit as well as strength of relationships among latent constructs for both males and females. The three models (Full, Direct, and Mediational) tested the underlying theoretical concept that the inclusion of a mediator improves model fit. The subtraction of the chi-square value of the Full Model from the chi-square vale of the Direct Model tested whether the unique variance from the mediator significantly improved model fit. In Hypotheses 1 and 2, it stated that the mediator would improve model fit. The subtraction of the of the chi-square of the Full Model from that of the Mediational Model tested whether the unique variance from the direct paths from the independent variables to the dependent variables were needed to explain the data. To confirm the importance of mediators in the relationship between the independent and

dependent constructs it was expected that the difference between the Full and the Mediational models would be non-significant. A description of each of the specific models is described below.

Full Model hypothesized that all the independent variables (Childhood Trauma and Family Functioning have a direct effect on the dependent variables (Physical Health and Psychological Health). It also hypothesized that Social Support would serve as a mediator between the independent and dependent variables (See Figures 1 and 5).

Direct Model hypothesized that Childhood Trauma and Family Functioning have a direct effect on Physical Health and Psychological Health (See Figures 2 and 6). This model is the same as the Full Model with the paths from the independent constructs to the mediators and the paths from the mediators to the dependent constructs removed.

Mediational Model hypothesized that Childhood Trauma and Family Functioning affect Physical Health and Psychological Health through the mediator of Social Support (See Figures 3 and 7). This model is the same as the Full Model with the paths from the independent constructs to the dependent constructs removed.

Phase IV (Cluster Analysis)

In this section Cluster Analyses were performed first on a random sample of 200 females and then performed on another subset of 220 (110 males, 110 females) participants to validate the cluster results. Cluster analysis is a method that groups a set of objects into homogenous subsets based on similarities among variables (Harlow, Rose, Morokoff, Quina, & Mitchell, 1998; Kachigan, 1991; Romesburg, 1990). It

seeks to organize information about variables so homogenous groups (clusters) can be formed. Some reasons for using cluster analysis include: (1) finding a true typology, model fitting, prediction based on groups, hypothesis testing, data expoloration, hypothesis generation, and data reduction (Everitt, 1980). Unlike other quantitative measures (regression and group difference statistics), cluster analysis does not focus on central tendencies (means, main effects, regression lines, etc.) Cluster analysis allows for the exploration of multifaceted relationships among variables. It allows researchers to search for clusters in the data that might not be visible to the researcher. One precaution about clustering methods is, that they are not supported by an extensive body of statistical reasoning, most methods are simple 'rules of thumb' (Aldenderfer & Blashfield, 1984). There is no 'right' way to do a cluster analysis, there are many plausible algorithms for ascertaining clusters in data. It is also important to note that different clustering methods generate different solutions. For this study a non-hierarchical clustering method (K-means clustering) was chosen. The K-means clustering method allows the user to specify a priori the number of anticipated clusters (Aldender & Blashfield, 1984). The K-means method will produce exactly *k* different clusters of greatest possible distinction. The K-Means clustering method is useful if you have a sample size of 200+ (Shail Dobson, personal communication, March 23, 2001). The K-Means clustering method can only be used if you have quantitative data at the interval or ratio level. When using K-means cluster analysis you should run the analysis using different number of clusters (i.e. 2, 3, 4, etc.). To assess which cluster solution is best you should look at the magnitude of the F values from the analysis of variance performed on each dimension (variable) in the

cluster analysis. This indicates how well the respective dimension discriminates between clusters (Tiffany Perkins, personal communication, March 23, 2001). Also, the cluster analysis should be conducted in multiple samples to ascertain which cluster solution best fits the data.

The variables Physical Abuse, Psychological Abuse, Sexual Abuse, and Family Functioning were used in the Cluster Analyses. Variables were checked for outliers and missing data prior to performing the cluster analysis, since these both can greatly affect the results of the cluster analysis (Kachigan, 1991). The variables were then transformed into standardized scores (z-scores) prior to performing the cluster analysis. This is routinely done when performing cluster analysis, although some researchers (Everitt, 1980) note that standardization can reduce the differences between groups on those variables that may well be the best discriminators of group differences. With K-means clustering, however, you need to standardize your variables prior to the cluster analysis. The squared Euclidean distance measure was used to assess the distances between cases. This method is one of the more popular methods (Aldenderfer & Blashfield). It is also the only distance measure available for K-means clustering (SPSS, 1998). The cluster analysis was conducted specifying 2, 3, or 4 clusters for both datasets. Clustering variable means were then plotted (See figures 9 to 14) and examined for interpretability. The size of the F-statistic in the K-means one-way analysis of variance (ANOVA) was also examined for each clustering solution to determine the best method. The magnitude of the F values from the ANOVAs performed on each clustering variable indicates how well the respective variable discriminates between clusters. You want these F statistics to be high. The

clustering results from both datasets were compared to assess similarities of clustering solutions. All of the above methods were used to determine the clustering solution that was the best fit. The clustering solution deemed to be the best fit was used in further analyses. It is to be noted that there is no acceptable or widely used statistical test as of yet to determine the appropriate number of clusters (Aldenderfer & Blashfield, 1984).

Phase V (Cluster Validation)

Once the clustering solution that was deemed the best fit was chosen, it was then further validated by performing significance tests on external variables. This validation method involves performing significance tests that compare the clusters on variables not used in the clustering solution (Aldenderfer & Blashfield). For this study, MANCOVAs were used with the resulting clusters as levels of the independent variable and Physical Health and Psychological Health measures as the dependent variables. Since prior research (e.g. Garmezy, 1981; Rutter, 1987; Werner, 1988) has shown that protective factors are related to health outcomes, it was decided that the protective factors (Resiliency, Spirituality, and Social Support variables) would be used as covariates in the analyses. This would allow for the unique variance of the clustering solution on the dependent variables to be determined. Post-hoc tukeys were also performed to assess the differences among the individual cluster groups on the dependent variables.

RESULTS

Trauma Frequencies

Frequencies were conducted on all the trauma variables and the questions that dealt with when the trauma occurred and who abused them. The majority of participants had experienced at least one incidence of physical (93%) and psychological trauma (95%). For sexual trauma the incidence was lower, only 31% of the sample had experienced at least one incidence of sexual trauma. Forty-one percent of the sample reported that they had never been abused during childhood. For those that said they had been abused (39%), the age their abuse began was as follows: 0 to 6 years old (23%), 7 to 10 years old (35%), 11 to 14 years old (21%), and 15 to 18 years old (21%). The age their abuse stopped was as follows: 0 to 6 years old (4%), 7 to 10 years old (9%), 11 to 14 years old (20%), and 15 to 18 years old (66%). Participants reported that the individuals who abused them were: strangers (7%), members of their immediate family (38%), members of their extended family (7%), a friend (24%), and other (29%). Participants reported that the discussed their abuse experiences with: a stranger (2%), members of their immediate family (32%), members of their extended family (8%), a friend (34%), and other (11%).

Pearson-Product Moment Correlations (Males and Females)

Table 6 depicts the correlations among the latent constructs for male participants and Table 7 depicts the correlations among the latent constructs for females. For the most part, the patterns of relationships among the constructs were the same for both males and females. One differing pattern that was found was the relationship between Spirituality and Physical Health. For males there was a significant positive

relationship (r = .24) and for females the relationship was non-significant and in the opposite direction (r = -.09). All other correlations were similar for males and females.

Insert Tables 6 & 7 about here

MANOVAs (Males versus Females)

Table 8 depicts the overall F value, degrees of freedom, p value, Wilks lambda, eta-squared, and Power for each one of the latent constructs. Table 9 depicts the means by gender, standard deviations, F values, degrees of freedom, and eta-squared from the follow-up univariate ANOVAS.

Insert Tables 8 & 9 about here

Childhood Trauma: Three dependent variables were used in this analysis: Physical Abuse, Psychological Abuse, and Sexual Abuse. The overall F for this analysis [$F(3,389)=13.72$, $p<.001$, $\lambda=.904$] was significant, with a moderate effect size ($\eta^2=.10$) and excellent power (1.00). Only the Physical Abuse univariate test was significant [$F(1,391)=12.43$, $p<.001$] with males ($M=12.35$) stating higher levels of exposure to physical abuse during childhood than females ($M=9.43$). The amount of shared variance between Physical Abuse and Gender was small ($\eta^2=.03$) and the effect sizes for the other two dependent variables were zero. Males and females did not differ significantly on levels of Psychological Abuse or Sexual Abuse.

Family Functioning: Three dependent variables were used in this analysis: Positive Affect, Family Conflicts, and Communication. The overall F was significant [$F(3,412)=2.85$, $p<.05$, $\lambda=.980$], with a very small effect size ($\eta^2=.02$) and moderate power (.68). Univariate follow-up tests revealed significance for Communication [$F(1,414)=5.46$, $p<.05$] with females ($\underline{M}=2.13$) reporting higher levels of communication among family members than males ($\underline{M}=1.92$). The effect size between Communication and Gender was small ($\eta^2=.01$). The effect sizes for the other two dependent variables were zero. Males and females did not significantly differ on Positive Affect or Family Conflicts.

Resiliency: Two dependent variables were used in this analysis: Personal Competence and Acceptance of Self and Life. The overall F was significant [$F(2.429)=3.45$, $p<.05$, $\lambda=.984$] with a small effect size ($\eta^2=.02$), and moderate power (.65). Univariate follow-up tests revealed significance for Acceptance of Self and Life [$F(1,430)=6.87$, $p<.01$] with males ($\underline{M}=3.11$) showing higher levels of acceptance of self/life than females ($\underline{M}=3.00$). The amount of shared variance between Acceptance of Self and Life and Gender was small ($\eta^2=.02$). The amount of shared variance between Personal Competence and Gender was zero. Males and females did not significantly differ on Personal Competence.

Spirituality: Two dependent variables were used in this analysis: Spiritual Involvement and Connection to Others. The overall F was significant [$F(2,416)=9.18$, $p<.001$, $\lambda=.958$] with a small effect size ($\eta^2=.04$), and excellent power (.98). Univariate follow-up tests revealed significance for Spiritual Involvement [$F(1,417)=6.11$, $p<.05$] with females ($\underline{M}=2.51$) showing higher levels of spiritual

involvement than males (M=2.34). The amount of shared variance between this dependent variable and Gender was small (η^2=.01). The univariate follow-up tests also revealed significance for Connection to Others [F(1,417)=13.63, p<.001] with females (M=3.22) showing higher levels of connection to others than males (M=3.02). The amount of shared variance between this dependent variable and Gender was small (η^2=.03).

Social Support: Three dependent variables were used in this analysis: Community Support, Family Support, and Peer Support. The overall F was highly significant [F(3,441)=9.61, p<.001, λ=.939] with a small effect size (η^2=.06), and excellent power (1.00). Univariate follow-up tests revealed significance for Community Support [F(1,443)=13.84, p<.001] with females (M=24.20) showing higher levels of support from community members than males (M=21.06). The amount of shared variance between Community Support and Gender was small (η^2=.03). The univariate follow-up tests also revealed significance for Peer Support [F(1,443)=22.28, p<.001] with females (M=28.36) depicting higher levels of support from their peers than males (M=25.29). The amount of shared variance between this dependent variable and Gender was medium (η^2=.05). Males and females did not differ significantly on Family Support. The amount of shared variance between Family Support and Gender was zero.

Physical Health: Three dependent variables were used in this analysis: Physical Health Perception, Health Visits, and Physical Health Problems. The overall F was significant [F(3,337)=3.23, p<.05, λ=.975] with a small effect size (η^2=.03), and adequate power (.74). Univariate follow-up tests revealed significance for Health

Visits [F(1,379)=5.36, p<.05] with females (M=6.72) reporting significantly more health visits over the past year than males (M=5.33). The amount of shared variance between Health Visits and Gender was small (η^2=.01). The univariate follow-up tests also revealed significance for Physical Health Problems [F(1,379)=7.93, p<.01] with females (M=31.89) reporting more physical health problems in the past year than males (M=25.70). The amount of shared variance between this dependent variable and Gender was small (η^2=.02). Males and females did not differ significantly on Physical Health Perception. The amount of shared variance between Health Perception and Gender was zero.

Psychological Health: Five dependent variables were used in this analysis: Dissociation, Anxiety, Depression, Post-Sexual Abuse Trauma, and Sleep Disturbance. The overall F was significant [F(5,413)=4.91, p<.001, λ=.944] with a small effect size (η^2=.06), and excellent power (.98). Univariate follow-up tests revealed significance for Anxiety [F(1,417)=12.22, p<.01] with females (M=.51) reporting significantly more anxiety over the past two months than males (M=.36). The amount of shared variance between Anxiety and Gender was small (η^2=.03). The univariate follow-up tests also revealed significance for Depression [F(1,417)=16.91, p<.001] with females (M=.67) reporting more depression over the past two months than males (M=.47). The amount of shared variance between this dependent variable and Gender was small (η^2=.04). Univariate follow-up tests revealed significance for Sleep Disturbance [F(1,417)=9.98, p<.01] with females (M=.88) reporting significantly more problems sleeping over the past two months than males (M=.68). The amount of shared variance between these two variables was small (η^2=.04).

Males and females did not differ significantly on Dissociation or Post-Sexual Abuse Trauma. The amount of shared variance between these variables and Gender was .00 and .01 respectively.

Structural Equation Modeling

To assess the plausibility of Hypotheses 1, 2, and 4, various SEM models for both males and females were compared. Hypothesis 1 stated: *There will be significant indirect relationships between childhood trauma and health outcomes (physical and psychological) through the protective factors (resiliency, spirituality, and social support).* Hypothesis 2 stated: *There will be significant indirect relationships between family functioning and health outcomes (physical and psychological) through the protective factors (resiliency, spirituality, and social support).* Hypothesis 4 stated: *The relationship between social support and health outcomes (physical and psychological) will be stronger for females than for males.*

The first model tested was the model originally hypothesized with all three protective factors (Resiliency, Spirituality, and Social Support) as mediating variables. The model however failed to converge and an error message appeared that stated that the Resiliency and Spirituality construct were linearly dependent on other variables. Linearly dependent on other parameters indicates that the covariance matrix of parameter estimates is singular, with the given parameter as estimated being a linear combination of other parameters (Bentler, 1995). This can be due to either the parameter being underidentified in an equation or the effects of empirical underidentification, due to the data. Since both Resiliency and Spirituality had only two manifest indicators, this could be a source of the problem. Linear dependence

among parameters is a potentially serious problem because the resulting solution cannot be fully trusted. Alternative models were tested dropping one of the two problem constructs out and leaving the other one in and the model still failed to converge. It was then decided to take out both Resiliency and Spirituality as mediators in the subsequent SEM analyses.

Figure 1 depicts the **Full Model** for female participants. Before the model was analyzed, one factor loading per construct was fixed to 1.0 for identification purposes. All the remaining factor loadings for the five latent constructs were significant at the .001 level or better. These results show that the variables are consistent indicators for their respective construct. Significant direct effects were found between the independent and dependent latent constructs. Childhood Trauma was found to be positively related to Physical Health (.29, $p<.01$) and positively related to Psychological Health (.31, $p<.001$). Family Functioning was found to be negatively related to Physical Health (-.32, $p<.01$) and negatively related to Psychological Health (-.41, $p<.01$). There were also some significant indirect effects. Childhood Trauma was found to be positively related to Social Support (.16, $p<.05$) and Family Functioning was found to be positively related to Social Support (.90, $p<.001$). All remaining indirect paths are not significant.

A significant negative relationship was found between the two independent constructs: Childhood Trauma and Family Functioning (-.49, $p<.001$). A significant positive relationship was found between the two dependent constructs: Physical Health and Psychological Health (.58, $p<.001$).

The percentages of explained variance for Social Support = .69, Physical Health = .21, and Psychological Health = .36 indicate large effect sizes (Cohen, 1992). The overall fit for the model is good with X^2 (109) = 453.29, N = 341, CFI = .86, and AASR = .04.

Insert Figure 1 about here

Figure 2 depicts the **Direct Model** for female participants. This model is the same as the Full Model with the mediator paths removed. Again, one factor loading per construct was fixed to 1.0. All the remaining factor loadings for each latent constructs were significant at the .001 level or better. Significant direct effects were found between the independent and dependent latent constructs. Childhood Trauma was found to be positively related to Physical Health (.31, $p<.001$) and positively related to Psychological Health (.30, $p<.001$). Family Functioning was found to be negatively related to Physical Health (-.21, $p<.05$) and negatively related to Psychological Health (-.39, $p<.001$).

A significant negative relationship was found between the two independent constructs: Childhood Trauma and Family Functioning (-.50, $p<.001$). A significant positive relationship was found between the two dependent constructs: Physical Health and Psychological Health (.58, $p<.001$).

The percentages of explained variance for Physical Health = .20, and Psychological Health = .35 indicate large effect sizes (Cohen, 1992). The overall fit for the model for N = 341 is not compelling with X^2 (113) = 632.17, CFI = .79, and AASR = .08.

Insert Figure 2 about here

Figure 3 depicts the **Mediational Model** for female participants. This model is the same as the Full Model with the direct paths removed. Again, one factor loading per construct was fixed to 1.0. All the remaining factor loadings for each latent constructs were significant at the .001 level or better. Childhood Trauma is positively related to Social Support (.15, $p<.05$), and Family Functioning is positively related to Social Support (.95, $p<.001$). In turn, Social Support is negatively related to Physical Health (-.28, $p<.001$), and Social Support is negatively related to Psychological Health (-.48,$p<.001$).

A significant negative relationship was found between the two independent constructs: Childhood Trauma and Family Functioning (-.51, $p<.001$). A significant positive relationship was found between the two dependent constructs: Physical Health and Psychological Health (.64, $p<.001$).

The percentages of explained variance for Physical Health = .08, and Psychological Health = .22 indicate medium effect sizes (Cohen, 1992). The overall fit for the model is adequate with X^2 (113) = 510.40, CFI = .84, and AASR = .06.

Insert Figure 3 about here

The subtraction of the chi-square value of the Full Model from the chi-square of the Direct Model tests whether the unique variance from the mediator significantly improve model fit. The chi-square difference test [$X^2(4) = 178.88$, $p<.001$] indicates that the paths to and from the mediator significantly improve model fit. Likewise, the

subtraction of the chi-square of the Full Model from that of the Mediational Model test whether the unique variance of the direct paths from the independent constructs to the dependent constructs significantly improve fit. The chi-square difference test [$X^2(4) = 57.11, p<.001$] indicates that the direct paths significantly improve model fit. Additionally, the examination of the percentage of explained variance for all three models reveals the highest overall percentage from the Full Model. These results indicate that the inclusion of not only the mediational but also the direct paths provide the best fit for the relationship between the independent predictors of childhood trauma and family functioning and the outcome variables of physical and psychological health for the sample of 341 female participants.

After examining the previous structural models a revised model was designed. It was shown that in the previous models that Childhood Trauma was significantly positively related to Social Support even though when you examine the bivarate correlation among these constructs (see table 7) there is a significant negative correlation among these constructs. After further examining the previous models and noticing the unusually large beta weight (.90) for the path from Family Functioning and Social Support, it was decided to include Family Functioning as a mediator instead of an independent construct.

A factor analysis was conducted with the family functioning, resiliency, spirituality, and social support factors. Two factors emerged: External Support and Internal Support. External Support consisted of the three Social Support and the three Family Functioning factors. The reliability of this construct was .78. The Internal Support Construct consisted of the two Resiliency factors. The reliability of this scale

was .85. The Spirituality factors did not load highly on either factor and thus were not included in the analyses.

Figure 4 depicts the **Revised Model** for female participants. This model does not contain the independent construct Family Functioning as previous models. Instead it contains two mediators: External Support and Internal Support. Before the model was analyzed, one factor loading per construct was fixed to 1.0 for identification purposes. All the remaining factor loadings for the four latent constructs were significant at the .001 level or better. Significant direct effects were found between the independent construct and dependent latent constructs. Childhood Trauma was found to be positively related to Physical Health (.32, $p<.001$) and positively related to Psychological Health (.34, $p<.001$). There were also significant indirect effects. Childhood Trauma was found to be negatively related to External Support (-.40, $p<.001$), and negatively related to Internal Support (-.24, $p<.001$). External Support was found to be negatively related to Psychological Health (-.25, $p<.001$). The path from External Support and Physical Health was not significant. Internal Support was found to be negatively related to Physical Health (-20, $p<.01$) and negatively related to Psychological Health (-.23,$p<.01$). A significant positive relationship was found between the two mediators: External Support and Internal Support (.45, $p<.001$). A significant positive relationship was found between the two dependent constructs: Physical Health and Psychological Health (.60, $p<.001$).

The percentages of explained variance for External Support = .16, Internal Support (.06), Physical Health = .22, and Psychological Health = .40 indicate small to large

effect sizes (Cohen, 1992). The overall fit for the model is adequate with X^2 (142) = 574.22, CFI = .84, and AASR = .04.

Insert Figure 4 about here

Figure 5 depicts the **Full Model** for the 110 male participants. Before the model was analyzed, one factor loading per construct was fixed to 1.0 for identification purposes. All the remaining factor loadings for the five latent constructs were significant at the .001 level or better. These results show that the variables are consistent indicators for their respective construct. Significant direct effects were found between one of the independent constructs and one of the dependent latent constructs. Family Functioning was found to be negatively related to Psychological Health (-.43, $p<.01$). All other direct paths were non-significant. There was also a significant indirect effect. Family Functioning was found to be positively related to Social Support (.90, $p<.001$). All remaining indirect paths are not significant.

A significant negative relationship was found between the two independent constructs: Childhood Trauma and Family Functioning (-.45, $p<.01$). A significant positive relationship was found between the two dependent constructs: Physical Health and Psychological Health (.67, $p<.001$).

The percentages of explained variance for Social Support = .79, Physical Health = .12, and Psychological Health = .24 indicate medium to large effect sizes (Cohen, 1992). The overall fit for the model is acceptable with X^2 (109) = 239.87, N = 110, CFI = .86, and AASR = .06.

Insert Figure 5 about here

Figure 6 depicts the **Direct Model** for male participants. This model is the same as the Full Model with the mediator paths removed. Again, one factor loading per construct was fixed to 1.0 for identification purposes. All the remaining factor loadings for each latent constructs were significant at the .001 level or better. One significant direct effect was found. Family Functioning was found to be negatively related to Psychological Health (-.38, $p<.01$). All other direct paths were non-significant.

A significant negative relationship was found between the two independent constructs: Childhood Trauma and Family Functioning (-.45, $p<.01$). A significant positive relationship was found between the two dependent constructs: Physical Health and Psychological Health (.67, $p<.001$).

The percentages of explained variance for Physical Health = .11, and Psychological Health = .24 indicate moderate effect sizes (Cohen, 1992). The overall fit for the model is not compelling with X^2 (113) = 294.45, N = 110, CFI = .80, and AASR = .10.

Insert Figure 6 about here

Figure 7 depicts the **Mediational Model** for male participants. This model is the same as the Full Model with the direct paths removed. Again, one factor loading per construct was fixed to 1.0 for identification purposes. All the remaining factor

loadings for each latent constructs were significant at the .001 level or better. Family Functioning is positively related to Social Support (.94, $p<.001$). In turn, Social Support is negatively related to Physical Health (-.31, $p<.05$, and Social Support is negatively related to Psychological Health (-.41, $p<.01$). The path from Childhood Trauma to Social Support was not significant.

A significant negative relationship was found between the two independent constructs: Childhood Trauma and Family Functioning (-.44, $p<.01$). A significant positive relationship was found between the two dependent constructs: Physical Health and Psychological Health (.67, $p<.001$).

The percentages of explained variance for Physical Health = .10, and Psychological Health = .16 indicate medium effect sizes (Cohen, 1992). The overall fit for the model is adequate with X^2 (113) = 247.93, CFI = .85, and AASR = .07.

Insert Figure 7 about here

The subtraction of the chi-square value of the Full Model from the chi-square of the Direct Model tests whether the unique variance from the mediator significantly improve model fit. The chi-square difference test [$X^2(4) = 54.58$, $p<.001$] indicates that the paths to and from the mediator significantly improve model fit. Likewise, the subtraction of the chi-square of the Full Model from that of the Mediational Model test whether the unique variance of the direct paths from the independent constructs to the dependent constructs significantly improve fit. The chi-square difference test [$X^2(4) = 8.06$, n.s] indicates that the direct paths do not significantly improve model fit. Additionally, the examination of the percentage of explained variance for all three

models reveals the highest overall percentage from the Full Model. These results indicate that the inclusion of only the mediational paths provide the best fit for the relationship between the independent predictors of childhood trauma and family functioning and the outcome variables of physical and psychological health for male participants.

After examining the previous structural models a revised model was designed. It was shown that in the previous models that Childhood Trauma was significantly positively related to Social Support even though when you examine the bivarate correlation among these constructs (see table 6) there is a significant negative correlation among these constructs. After further examining the previous models and noticing the unusually large beta weight (.90) for the path from Family Functioning and Social Support, it was decided to include Family Functioning as a mediator instead of an independent construct.

Figure 8 depicts the **Revised Model** for male participants. This model does not contain the independent construct Family Functioning as previous models. Instead it contains two mediators: External Support and Internal Support. Before the model was analyzed, one factor loading per construct was fixed to 1.0 for identification purposes. All the remaining factor loadings for the four latent constructs were significant at the .001 level or better. Significant direct effects were found between the independent construct and one of the dependent latent constructs. Childhood Trauma was found to be positively related to Psychological Health (.24, $p<.05$). There was one significant indirect effect. Childhood Trauma was found to be negatively related to External Support (-.35, $p<.01$). All other indirect paths were non-

significant. A significant positive relationship was found between the two mediators: External Support and Internal Support (.45, $p<.001$). A significant positive relationship was found between the two dependent constructs: Physical Health and Psychological Health (.63, $p<.001$).

The percentages of explained variance for External Support = .12, Internal Support (.05), Physical Health = .15, and Psychological Health = .26 indicate small to large effect sizes (Cohen, 1992). The overall fit for the model is adequate with X^2 (142) = 306.23, CFI = .84, and AASR = .06.

Insert Figure 8 about here

Table 10 (females) and Table 11 (males) depict a summary of the previous overall model findings including chi-square, degrees of freedom, confirmatory fit index, average absolute standardized residual, and chi-square difference results for each model.

Insert Tables 10 and 11 about here

Cluster Analyses

The variables used in these analyses were Physical Abuse, Psychological Abuse, Sexual Abuse, and Family Functioning. K-Means cluster analyses were performed on a random sample of 200 females to test the plausibility of a 2, 3, and 4 cluster solution. Each cluster solution was then examined for significant ANOVAS between cluster variables. The clustering variable means were then plotted and examined for

interpretability. Another set of K-Means cluster analyses were then performed on a subset of 220 participants again testing the plausibility of a 2, 3, and 4 cluster solution. Each cluster solution was then examined for significant anovas between cluster variables and the variables were then plotted and examined for interpretability. After comparing the two sets of cluster analyses the clustering solution that was determined to be the best was then used in further analyses.

Random Sample of 200 Females

Figure 9 depicts a graphic display of the standardized means of the clustering variables for the 2-cluster solution. The 2-cluster solution revealed one cluster that contained participants who had high levels of Physical Abuse (M=.86), Psychological Abuse (M=.92), and Sexual Abuse (M=.71) and a low level of Family Functioning (M=-.39). The other cluster contained participants who had low levels of Physical Abuse (M=-.50), Psychological Abuse (M=-.53), and Sexual Abuse (M=-.41) and a high level of Family Functioning (M=.22). These means are the standardized means that are depicted in Figure 9. The ANOVAS for the clustering variables were all significant at a $p<.0001$. The size of the F-statistics were as follows: Physical Abuse (151.25), Psychological Abuse (190.38), Sexual Abuse (81.93), and Family Functioning (18.8). This indicates that Psychological Abuse discriminates the best between the clusters and Family Functioning discriminates the least.

Insert Figure 9 about here

Figure 10 depicts a graphic display of the standardized means of the clustering variables for the 3-cluster solution. The 3-cluster solution revealed one cluster that

contained participants who had high levels of Physical Abuse (M=.99), Psychological Abuse (M=.94), and low levels of Sexual Abuse (M=-.41) and Family Functioning (M=-.32). Another cluster contained participants who had high levels of Physical Abuse (M=.40), Psychological Abuse (M=.49), and Sexual Abuse (M=1.82) and a moderate level of Family Functioning (M=-.27). The last cluster contained participants who had low levels of Physical Abuse (M=-.61), Psychological Abuse (M=-.62), and Sexual Abuse (M=-.47) and a high level of Family Functioning (M=.25). These means are the standardized means that are depicted in Figure 10. The ANOVAS for the clustering variables were all significant at a $p<.001$ or better. The size of the F-statistics were as follows: Physical Abuse (93.80), Psychological Abuse (94.41), Sexual Abuse (494.83), and Family Functioning (7.88). This indicates that Sexual Abuse discriminates the best between the clusters and Family Functioning discriminates the least.

Insert Figure 10 about here

Figure 11 depicts a graphic display of the standardized means of the clustering variables for the 4-cluster solution. The 4-cluster solution revealed one cluster that contained participants who had high levels of Physical Abuse (M=.004), Psychological Abuse (M=1.15), and Sexual Abuse (M=.63) and low levels of Family Functioning (M=-3.17). Another cluster contained participants who had high levels of Physical Abuse (M=1.47), Psychological Abuse (M=1.41), and Sexual Abuse (M=.48) and a moderate level of Family Functioning (M=-.35). Another cluster contained participants who had high levels of Physical Abuse (M=.12), Psychological Abuse

(M=.01), and Sexual Abuse (M=.25) and a high level of Family Functioning (M=.19). The last cluster contained participants who had low levels of Physical Abuse (M=-.83), Psychological Abuse (M=-.85), and Sexual Abuse (M=-.53) and a high level of Family Functioning (M=.18). These means are the standardized means that are depicted in Figure 11. The ANOVAS for the clustering variables were all significant at a $p<.0001$. The size of the F-statistics were as follows: Physical Abuse (137.52), Psychological Abuse (144.98), Sexual Abuse (15.08), and Family Functioning (28.19). This indicates that Psychological Abuse discriminates the best between the clusters and Sexual Abuse discriminates the least.

Insert Figure 11 about here

Sub-sample of 220 participants

Figure 12 depicts a graphic display of the standardized means of the clustering variables for the 2-cluster solution. The 2-cluster solution revealed one cluster that contained participants who had high levels of Physical Abuse (M=.73), Psychological Abuse (M=.76), and Sexual Abuse (M=.38) and a low level of Family Functioning (M=-.23). The other cluster contained participants who had low levels of Physical Abuse (M=-.74), Psychological Abuse (M=-.77), and Sexual Abuse (M=-.38) and a high level of Family Functioning (M=.24). These means are the standardized means that are depicted in Figure 12. The ANOVAS for the clustering variables were all significant at a $p<.0001$. The size of the F-statistics were as follows: Physical Abuse (263.19), Psychological Abuse (308.30), Sexual Abuse (37.12), and Family

Functioning (12.95). This indicates that Psychological Abuse discriminates the best between the clusters and Family Functioning discriminates the least.

Insert Figure 12 about here

Figure 13 depicts a graphic display of the standardized means of the clustering variables for the 3-cluster solution. The 3-cluster solution revealed one cluster that contained participants who had high levels of Physical Abuse (M=.55), Psychological Abuse (M=.71), and low levels of Sexual Abuse (M=-.46) and Family Functioning (M=-.28). Another cluster contained participants who had high levels of Physical Abuse (M=.81), Psychological Abuse (M=.66), and Sexual Abuse (M=1.83) and a moderate level of Family Functioning (M=-.007). The last cluster contained participants who had low levels of Physical Abuse (M=-.81), Psychological Abuse (M=-.88), and Sexual Abuse (M=-.41) and a high level of Family Functioning (M=.27). These means are the standardized means that are depicted in Figure 13. The ANOVAS for the clustering variables were all significant at a $p<.001$ or better. The size of the F-statistics were as follows: Physical Abuse (120.75), Psychological Abuse (171.56), Sexual Abuse (417.05), and Family Functioning (7.14). This indicates that Sexual Abuse discriminates the best between the clusters and Family Functioning discriminates the least.

Insert Figure 13 about here

Figure 14 depicts a graphic display of the standardized means of the clustering variables for the 4-cluster solution. The 4-cluster solution revealed one cluster that contained participants who had high levels of Physical Abuse (M=.81), Psychological Abuse (M=.71), and Sexual Abuse (M=1.84) and moderate levels of Family Functioning (M=-.13). Another cluster contained participants who had high levels of Physical Abuse (M=.57) and Psychological Abuse (M=.71) and low levels of Sexual Abuse (M=-.47) and Family Functioning (M=-.29). Another cluster contained participants who had low levels of Physical Abuse (M=-.57), Psychological Abuse (M=-.85), and Sexual Abuse (M=-.36) and a high level of Family Functioning (M=1.18). The last cluster contained participants who had low levels of Physical Abuse (M=-.99), Psychological Abuse (M=-.87), and Sexual Abuse (M=-.40) and a low level of Family Functioning (M=-.49). These means are the standardized means that are depicted in Figure 14. The ANOVAS for the clustering variables were all significant at a $p<.0001$. The size of the F-statistics were as follows: Physical Abuse (85.82), Psychological Abuse (114.20), Sexual Abuse (255.37), and Family Functioning (44.42). This indicates that Sexual Abuse discriminates the best between the clusters and Family Functioning discriminates the least.

Insert Figure 14 about here

After examining both sets of cluster analyses, it was decided that the 3-cluster solution was the best fit. The 4-cluster solution was different in both analyses so that was automatically excluded and while the 2-cluster solution in both analyses was the same, it offered less information than the 3-cluster solution. The 3-cluster solution

was the same in both analyses. It contained three distinct clusters which were labeled as follows: (1) High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning, (2) High Childhood Trauma/Moderate Family Functioning, and (3) Low Childhood Trauma/High Family Functioning. The first cluster contains participants who have only high levels of Physical and Psychological Abuse. The second cluster contains participants who have high levels of multiple traumas (physical, psychological, and sexual). The third cluster contains individuals who have low levels of trauma. Validation of the cluster solution was then examined using external variables, specifically the health outcomes as dependent variables and the protective factors as covariates. These analyses were conducted on both datasets.

MANCOVAs (Random Sample of 200 Females)

Table 14 depicts the means and standard deviations for each cluster group on all the dependent variables. Tables 15 and 16 depicts the F values, degrees of freedom, and eta-squared from the follow-up univariate ANOVAS.

Insert Tables 14, 15, and 16 about here

Physical Health: Seven covariates were used in this analysis: Personal Competence, Acceptance of Self and Life, Spiritual Involvement, Connection to Others, Community Support, Family Support, and Peer Support. The Independent variable was the Cluster Variable (3 levels). The dependent variables were Physical Health Perception, Health Visits, and Physical Health Problems. The overall F for this analysis [$F(6,282)=1.713$, n.s., $\lambda=.931$] was not significant, with a small effect size ($\eta^2=.04$) and moderate power (.65). Only the Physical Health Problems univariate test

was significant [F(2.14)=3.57, p<.05] with participants reporting High Childhood Trauma/Moderate Family Functioning (M=38.76) stating higher levels of Physical Health Problems than those with High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning (M=33.86) and Low Childhood Trauma/High Family Functioning (M=28.46). None of the covariates were significant for this dependent variable. Post-hoc tukey tests revealed a significant difference for only High Childhood Trauma/Moderate Family Functioning and Low Childhood Trauma/Moderate Family Functioning. The amount of shared variance between Physical Health Problems and Cluster variable was small (η^2=.05). Cluster groups did not differ significantly on levels of Physical Health Perception and Health Visits.

Psychological Health: Seven covariates were used in this analysis: Personal Competence, Acceptance of Self and Life, Spiritual Involvement, Connection to Others, Community Support, Family Support, and Peer Support. The Independent variable was the Cluster Variable (3 levels). The dependent variables were Dissociation, Anxiety, Depression, Post-Sexual Abuse Trauma, and Sleep Disturbance. The overall F for this analysis [F(10,300)=2.11, p<.05, λ=.873] was significant, with a small effect size (η^2=.07) and excellent power (.90). The Depression univariate test was significant [F(2,154)=8.57, p<.001] with participants with High Childhood Trauma/Moderate Family Functioning (M=.89) associated with higher levels of Depression than participants with High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning (M=.81) and Low Childhood Trauma/High Family Functioning (M=.53). One of the covariates, Acceptance of Self and Life, was a significant covariate [F(1,154)=21.43,p<.001] with a medium effect

size (η^2=.12). Post-hoc tukey tests revealed a significant difference between those with High Childhood Trauma/Moderate Family Functioning and those with Low Childhood Trauma/High Family Functioning as well as those with High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning. The amount of shared variance between Depression and Cluster variable was medium (η^2=.10). The Sleep Disturbance univariate test was significant [F(2,154)=6.72, p<.01] with participants with High Childhood Trauma/Moderate Family Functioning (M=1.16) stating higher levels of Sleep Disturbance than those with High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning (M=1.07) and those with Low Childhood Trauma/High Family Functioning (M=.72). None of the covariates was significant for this dependent variable. Post-hoc tukey tests revealed a significant difference between those with High Childhood Trauma/Moderate Family Functioning and those with Low Childhood Trauma/High Family Functioning as well as those with High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning. The amount of shared variance between Sleep Disturbance and Cluster variable was medium (η^2=.08). Cluster groups did not differ significantly on Dissociation, Anxiety, and Post-Sexual Abuse Trauma.

Post Hoc Analyses for Random Sample of 200 Participants

Post Hoc Univariate ANCOVAs were done on the dependent variables in the previous analyses that did not show significance. Only the protective factors that had previously shown significance were used as covariates. For Physical Health Perception there was still no significant difference between cluster groups [F(2,189) = 1.05, n.s.]. The amount of shared variance between Cluster variable and Physical

Health Perception was small (η^2=.01). For Health Visits there was also still no significant difference between cluster groups [F(2,184) = 2.07, n.s.]. The amount of shared variance between Cluster variable and Health Visits was small (η^2=.02). There was a significant difference between cluster groups on Dissociation [F(2,182) = 4.19, p<.05]. The amount of shared variance between Cluster variable and Dissociation was small (η^2=.04). The Tukey test revealed a significant difference between the groups High Child Trauma/Moderate Family Functioning and Low Child Trauma/High Family Functioning on Dissociation. There was a significant difference between cluster groups on Anxiety [F(2,185) = 3.15, p<.05]. The amount of shared variance between Cluster variable and Anxiety was small (η^2=.03). The Tukey test revealed a significant difference between the groups High Child Trauma/Moderate Family Functioning and Low Child Trauma/High Family Functioning on Anxiety. There was a significant difference between cluster groups on Post-Sexual Abuse Trauma [F(2,182) = 6.20, p<.01]. The amount of shared variance between Cluster variable and Dissociation was medium (η^2=.06). The Tukey test revealed a significant difference between the groups High Child Trauma/Moderate Family Functioning and Low Child Trauma/High Family Functioning as well as High Physical + Psychological/Low Sexual + Family Functioning and Low Child Trauma/High Family Functioning on Post-Sexual Abuse Trauma.

MANCOVAs (Subset of 220 Participants)

Table 17 depicts the means and standard deviations for each cluster group on all the dependent variables. Tables 18 and 19 depicts the F values, degrees of freedom, and eta-squared from the follow-up univariate ANOVAS.

Insert Tables 17, 18, and 19 about here

Physical Health: Seven covariates were used in this analysis: Personal Competence, Acceptance of Self and Life, Spiritual Involvement, Connection to Others, Community Support, Family Support, and Peer Support. The Independent variable was the Cluster Variable (3 levels). The dependent variables were Physical Health Perception, Health Visits, and Physical Health Problems. The overall F for this analysis [$F(6,416)=1.55$, n.s., $\lambda=.957$] was not significant, with a small effect size ($\eta^2=.02$) and moderate power (.60). Only the Physical Health Problems univariate test was significant [$F(2,210)=3.30$, $p<.05$] with participants with High Childhood Trauma/Moderate Family Functioning ($\underline{M}=33.41$) stating higher levels of Physical Health Problems than participants with High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning ($\underline{M}=31.40$) and those with Low Childhood Trauma/High Family Functioning ($\underline{M}=24.18$). One of the covariates was significant for this dependent variable. Family Support was a significant covariate [$F(1,210)=5.60$, $p<.05$] with a small effect size ($\eta^2=.02$). Post-hoc Tukey tests revealed a significant difference between those with High Childhood Trauma/Moderate Family Functioning and those with Low Childhood Trauma/Moderate Family Functioning as well as those with High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning and those with Low Childhood Trauma/High Family Functioning. The amount of shared variance between Physical Health Problems and Cluster variable was small ($\eta^2=.03$). Cluster groups did not differ significantly on levels of Physical Health Perception and Health Visits.

Psychological Health: Seven covariates were used in this analysis: Personal Competence, Acceptance of Self and Life, Spiritual Involvement, Connection to Others, Community Support, Family Support, and Peer Support. The Independent variable was the Cluster Variable (3 levels). The dependent variables were Dissociation, Anxiety, Depression, Post-Sexual Abuse Trauma, and Sleep Disturbance. The overall F for this analysis [$F(10,412)=1.91$, $p<.05$, $\lambda=.913$] was significant, with a small effect size ($\eta^2=.04$) and good power (.86). The Dissociation univariate test was significant [$F(2,210)=4.71$, $p<.01$] with participants with High Childhood Trauma/Moderate Family Functioning ($\underline{M}=.75$) showing higher levels of Dissociation than those with High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning ($\underline{M}=.70$) and those with Low Childhood Trauma/High Family Functioning ($\underline{M}=.42$). One of the covariates, Acceptance of Self and Life, was a significant covariate [$F(1,210)=7.48$, $p<.01$] with a small effect size ($\eta^2=.03$). Post-hoc Tukey tests revealed a significant difference for participants with High Childhood Trauma/Moderate Family Functioning and those with Low Childhood Trauma/High Family Functioning as well as those with High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning. The amount of shared variance between Dissociation and Cluster variable was small ($\eta^2=.04$). The Post-Sexual Abuse Trauma univariate test was significant [$F(2,210)=4.19$, $p<.05$] with participants with High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning ($\underline{M}=.53$) demonstrating higher levels of Post-Sexual Abuse Trauma than those with High Childhood Trauma/Moderate Family Functioning ($\underline{M}=.47$) and those with Low Childhood Trauma/High Family Functioning ($\underline{M}=.28$). One of the

covariates, Acceptance of Self and Life, was significant [F(1,210)=10.84, p<.01] with a small effect size (η^2=.04). Post-hoc Tukey tests revealed a significant difference for participants with High Childhood Trauma/Moderate Family Functioning and those with Low Childhood Trauma/High Family Functioning as well as those with High Physical and Psychological Abuse/Low Sexual Abuse and Family Functioning. The amount of shared variance between Post-Sexual Abuse Trauma and Cluster variable was small (η^2=.04). Cluster groups did not differ significantly on Anxiety, Depression and Sleep Disturbance.

Post Hoc Analyses for Subset of 220 Participants

Post Hoc Univariate ANCOVAs were conducted on the dependent variables in the previous analyses that did not show significance. Only the protective factors that had previously shown significance were used as covariates. For Physical Health Perception there was still no significant difference between cluster groups [F(2,216) = 1.49, n.s.]. The amount of shared variance between Cluster variable and Physical Health Perception was small (η^2=.01). For Health Visits there was also still no significant difference between cluster groups [F(2,215) = 2.91, n.s.]. The amount of shared variance between Cluster variable and Health Visits was small (η^2=.03). There was a significant difference between cluster groups on Anxiety [F(2,216) = 3.53, p<.05]. The amount of shared variance between Cluster variable and Anxiety was small (η^2=.03). The Tukey test revealed a significant difference between the groups High Physical + Psychological/Low Sexual + Family Functioning and Low Child Trauma/High Family Functioning on Anxiety. There was no significant difference between cluster groups on Depression [F(2,216) = 1.01, n.s.]. The amount of shared

variance between Cluster variable and Depression was small (η^2=.01). There was no significant difference between cluster groups on Sleep Disturbance [F(2,216) = 2.02, n.s.]. The amount of shared variance between Cluster variable and Sleep Disturbance was small (η^2=.02).

DISCUSSION

Summary of Gender Differences

Gender differences among the latent constructs revealed numerous differences between men and women. In terms of the independent constructs, men tended to have more exposure to physical abuse during childhood than females. This has consistently been shown in other research (Maccoby & Jacklin, 1974; Straus & Gelles, 1995). Parents tend to use more physical punishment on boys than girls. There were no differences for psychological abuse and sexual abuse. In previous research it has been shown that females tend to report more psychological and sexual abuse than males (Hoover, Murphy, Taft, 2000). Females showed higher levels of communication among family members than males. There were no differences for positive family affect and family conflicts.

For the protective factors there was some interesting differences. Men showed higher levels of acceptance of self and life than did females. They had a higher sense of meaning in their lives and they tended not to dwell on the negative. There were no differences for personal competence. Men and women tended to both feel able to deal with situations that came their way. Females showed higher levels of spiritual involvement and connection to others then males. They used spiritual resources more often to deal with their problems. Females also utilized members in their community

and their peers as sources of support more often than males. This is consistent with previous research that shows that women tend to rely on others more in dealing with their problems whereas men tend to rely on internal characteristics in dealing with their problems (Matuszek, Nelson, & Quick, 1995; Ptacek, Smith, & Dodge, 1994 Shek, 1992; Werner, 1988). Family support was not significantly different for men and women.

For health outcomes females reported significantly more health visits in the past year as well as more physical health problems in the past year than males. This is consistent with previous research that shows that females self-report more physical health problems than males (Arnow et al, 1999; Cunningham et al., 1988). Females also showed higher levels of anxiety, depression, and sleep disturbance over the past two months than males did. Psychological disorder is reported more by females than by males (Golding, 1999).

Summary of Hypothesized Models

A series of structural equation models were conducted to examine the ways childhood stressors (childhood trauma and family functioning) were related to adulthood health (physical and psychological). Direct and indirect (through social support) relationships were examined. All structural models were analyzed on female and male subsamples separately to ascertain if there were differences in paths for women and men. Full, Direct, and Mediational Models were tested to reveal which paths improved model fit.

For females it was shown that there were some significant direct and indirect paths. In the **Full Model** it was shown that there was a significant positive relationship

between childhood trauma and both physical and psychological health. There was also a significant negative relationship between family functioning and both physical and psychological health. It was unexpected that childhood trauma had a significant positive relationship with social support, since the bivariate correlation between these constructs was significantly negative (see Table 7). The only significant indirect relationships that were found were significant positive relationships between childhood trauma and social support and family functioning and social support. This partially supported Hypotheses 1 and 2, which stated that there would be significant direct and indirect paths between the independent constructs (child trauma and family functioning) and the dependent constructs (physical and psychological health). Research has shown that both childhood trauma and family functioning are positively related to health outcomes (Cunningham et al., 1988; Jaffe et al., 1986; Papadolpoulous, 1995). It was unexpected that social support was not significantly related to either physical or psychological health, since the bivariate correlations between those constructs were highly significant (see Table 7). It had also been shown in previous research that social support was negatively related to poor health outcomes (Licitra-Kleckler & Waas, 1993; Werner, 1992).

When the **Direct Model** was examined for females it was found that all the direct paths between independent and dependent constructs was significant. However, both the CFI (.79) and AASR (.08) were not optimal, indicating that this model really didn't fully represent the interrelationship between these constructs. When the **Mediational Model** was examined for females it was found that all the indirect paths were significant, which was not shown in the **Full Model**. Both childhood trauma and

family functioning were positively related to social support. Social support was negatively related to psychological and physical health. This supports Hypothesis 1 which stated that there would be an indirect relationship between the independent constructs (child trauma and family functioning) and the dependent constructs (physical and psychological health). Survivor theory (Goldolf & Fisher, 1988) explains this relationship between childhood experiences and health outcomes. It states that individuals who have had traumatic experiences seek out support from others to deal with their problems. Those that find support have healthier outcomes than those who support requests are ignored or are not satisfactorily met.

The chi-square difference tests indicated that the paths to and from the mediator significantly improve model fit. The direct paths from the independent to the dependent constructs also improve model fit. This indicates that the **Full Model** best describes the data. This partially confirms hypotheses 1 and 2, which stated that the indirect paths would be significant, though only the indirect paths from the independent constructs to the mediator were significant in the **Full Model**.

In further examining the three models it was discovered that there was an unusually high beta weight for the path between family functioning and social support (>.90). This could represent collinearity among the constructs. Collinearity can seriously affect statistical outcomes (Tabachnick & Fidell, 1996). It was also found that the relationship between childhood trauma and social support was positive when the bivariate correlation between these constructs was negative. This indicated the presence of suppressor variables in the model. Tabachnick & Fidell (1996) describe suppressor variables as those independent variables that suppress variance that is

irrelevant to the prediction of the dependent variable. One of the ways to identify a suppressor variable is through examination of the correlations and regression coefficients of the independent variable and the dependent variable. If the bivariate correlation and beta weight have different signs, a suppressor variable is present. Another way to test if there is a suppressor variable is to remove the independent variable and see if the beta weight of the path from the other independent variable and dependent variable changes in sign and/or strength.

Due to possible collinearity problems and the presence of a suppressor variable, it was decided to revise the model and take out family functioning as an independent construct and make it a mediating construct. **The Revised Model** showed that all direct and all but one of the indirect paths were significant. Childhood trauma was positively related to both physical and psychological health. Childhood trauma was now negatively related to external and internal support. External support was only related to psychological health but not physical health and internal support was negatively related to both physical and psychological health. This partially confirms Hypotheses 1 and 2, which stated that the indirect paths would be significant. It was decided that this was the best model to describe the data.

For males it was shown that there were some significant direct and indirect paths. In the **Full Model** it was shown that there was a significant negative relationship between family functioning and psychological health. The relationship between family functioning and physical health was non-significant. All direct paths from childhood trauma were non-significant. The only significant indirect relationship that was found was a significant positive relationship between family functioning and

social support. All other indirect paths were non-significant. This partially supported Hypotheses 2, which stated that there would be significant direct and indirect paths between the family functioning and the dependent constructs (physical and psychological health). Research has shown that family functioning is positively related to health outcomes (Papadolpoulous, 1995). It was unexpected that childhood trauma was not positively related to health outcomes. Previous research has shown that childhood trauma is positively related to poor physical and psychological health problems as adults (Cunningham et al., 1988; Jaffe et al., 1986). It was unexpected that social support was not significantly related to psychological health, since the bivariate correlation between those constructs were highly significant (see Table 6). It had also been shown in previous research that social support was negatively related to poor health outcomes (Licitra-Kleckler & Waas, 1993; Werner, 1992).

When the **Direct Model** was examined for males it was found that only one of the direct paths between independent and dependent constructs was significant. The path from family functioning to psychological health was found to be negative. Both the CFI (.80) and AASR (.10) were not optimal indicating that this model really didn't fully represent the interrelationship between these constructs. When the **Mediational Model** was examined for males it was found that all the indirect paths, except the path from childhood trauma and social support, was significant, which was not shown in the **Full Model**. Family functioning was positively related to social support. Social support was negatively related to psychological and physical health. This supports Hypothesis 2, which stated that there would be an indirect relationship between family functioning and the dependent constructs (physical and psychological health).

Survivor theory (Goldolf & Fisher, 1988) explains this relationship between childhood experiences and health outcomes. It states that individuals who have had traumatic experiences seek out support from others to deal with their problems. Those that find support have healthier outcomes than those who support requests are ignored or are not satisfactorily met.

The chi-square difference tests indicated that the paths to and from the mediator significantly improve model fit. The direct paths from the independent to the dependent constructs did not improve model fit. This indicates that the **Mediational Model** best describes the data for this sub-sample of men. This confirms hypotheses 1 and 2, which stated that indirect paths would be significant.

Due to possible collinearity problems and the presence of a suppressor variable, it was decided to revise the model and take out family functioning as an independent construct and instead use it a mediating construct. **The Revised Model** showed that only one of the direct paths was significant and only one of the indirect paths were significant. Childhood trauma was positively related to psychological health but not to physical health. Childhood trauma was negatively related to external support. It was decided that this model best fit the data. While many of the paths were not significant, more variance was accounted for in the mediating and dependent constructs in this model versus the other models. This partially confirms Hypotheses 1 and 2, which stated that the indirect paths would be significant.

In comparing the models for females and males there was some interesting similarities and differences. All beta weights were fairly similar for females and males, although the beta weights for the paths from social support and psychological

health was slightly stronger for females than for males and the paths from social support to physical health was slightly weaker for females than for males. For females the direct paths from childhood trauma to the dependent constructs were significant. For males only the direct path from childhood trauma and psychological health was significant. This partially supported Hypothesis 4, which stated that the paths from social support to the health outcomes would be stronger for females than for males. Previous research has shown that females rely more on social support networks in dealing with their problems than do males (Ptacek et al., 1994; Werner, 1988).

Summary of Cluster Analyses

K-means cluster analysis was performed on two samples; a random sample of 200 females and a sub-sample (non-random) of 220 males and females. Each cluster analysis contained the following variables: physical abuse, psychological abuse, sexual abuse, and family functioning. Cluster solutions of 2, 3, and 4 cluster groups were tested on both samples. The cluster solutions were then compared and the clustering solution that was determined to be the best was used in further analyses.

In the first sample of 200 females, the results of the 2-cluster solution revealed a cluster, which contained participants who had high levels of all the childhood trauma variables and low levels of family functioning and a cluster, which had low levels of all the childhood trauma variables and high levels of family functioning. The resulting ANOVA showed that all clustering variables were significant and that psychological abuse discriminated the best between the clusters and family functioning discriminated the least.

In the 200 females sample, the 3-cluster solution revealed 3 distinct clusters: one which had participants with high levels of physical and psychological abuse but low levels of sexual abuse and family functioning; a cluster which contained participants who had high levels of all the childhood trauma variables and moderate levels of family functioning; and a cluster which contained participants who had low levels of all the childhood trauma variables and high levels of family functioning. The resulting ANOVA showed that all clustering variables were significant and that sexual abuse discriminated the best between the clusters and family functioning discriminated the least.

In the 200 females sample, the 4-cluster solution revealed 4 distinct clusters: one cluster that contained participants who had high levels of all the childhood trauma variables and low levels of family functioning; one cluster which contained participants who had high levels of all the childhood trauma variables and a moderate level of family functioning; a cluster that contained high levels on all the childhood trauma variables and a high level of family functioning; and a cluster which contained participants who had low levels of all the childhood trauma variables and a high level of family functioning. The resulting ANOVAs were all significant and they indicated that psychological abuse discriminated the best between the clusters and that sexual abuse discriminated the least.

In the second sample of 220 participants, the results of the 2-cluster solution revealed a cluster, which contained participants who had high levels of all the childhood trauma variables and low levels of family functioning and a cluster, which had low levels of all the childhood trauma variables and high levels of family

functioning. The resulting ANOVA showed that all clustering variables were significant and that psychological abuse discriminated the best between the clusters and family functioning discriminated the least.

In the second sample, the 3-cluster solution revealed 3 distinct clusters: one which had participants with high levels of physical and psychological abuse but low levels of sexual abuse and family functioning; a cluster which contained participants who had high levels of all the childhood trauma variables and moderate levels of family functioning; and a cluster which contained participants who had low levels of all the childhood trauma variables and high levels of family functioning. The resulting ANOVA showed that all clustering variables were significant and that sexual abuse discriminated the best between the clusters and family functioning discriminated the least.

In the second sample, the 4-cluster solution revealed 4 distinct clusters: one cluster that contained participants who had high levels of physical and psychological abuse and low levels of sexual abuse and family functioning; one cluster which contained participants who had high levels of all the childhood trauma variables and a moderate level of family functioning; a cluster that contained low levels on all the childhood trauma variables and a high level of family functioning; and a cluster which contained participants who had low levels of all the childhood trauma variables and a high level of family functioning. The resulting ANOVAs were all significant and they indicated that psychological abuse discriminated the best between the clusters and that sexual abuse discriminated the least.

In examining the cluster solutions from both samples, similarities and differences were found. In both samples, the 2-cluster and the 3-cluster solution were identical. The 2-cluster solution represented the extremes; a cluster with high levels of childhood trauma and a low level of family functioning and a cluster with low levels of childhood trauma and a high level of family functioning. The 3-cluster solution displayed more variability between clusters. There was still a cluster group which contained low levels of childhood trauma and a high level of family functioning but now there was a cluster group which contained high levels of childhood trauma and moderate levels of family functioning and a cluster which contained high levels of physical and psychological abuse but low levels of sexual abuse and family functioning. The 4-cluster solution in both samples was vastly different. Even though parsimony is important it was decided to go with the 3-cluster solution instead of the 2-cluster solution as the best solution. It was felt it was important to look for differences between groups that had high versus low levels of sexual abuse in conjunction with the other variables. The 3-cluster solution was then used in further analyses to validate the cluster solution using external variables.

Summary of Cluster Differences

MANCOVAs using the cluster solution as the independent variable (3 levels), protective factors (resiliency, spirituality, social support) as covariates, and health outcomes (physical and psychological health) as the dependent variables. Separate MANCOVAs were done for physical and psychological health variables. The MANCOVAs were done on both samples; the random sample of 200 females and the

sub-sample of 220 males and females. These results from the MANCOVAs from both samples were then compared to look for similarities.

For the random sample, the overall MANCOVA for physical health was significant. Only the physical health problems univariate test was significant showing that females in the multiple traumas cluster had higher levels of physical health problems than females in both the high physical and psychological trauma the low childhood trauma clusters. Females who had high levels of childhood trauma (physical, psychological, and sexual) had the worst physical health outcomes even compared to the females with high physical and psychological abuse. No covariates were significant for this univariate test. There were no significant differences for health perception or health visits.

These results are consistent with previous research that shows that those individuals who were sexually abused have the most physical health problems than those who were just physically and/or psychologically abused or those who were never abused (Berkowitz, 2000; Golding et al., 1988; Walker et al., 1999). These results were not consistent with research that shows that those individuals who have multiple traumas utilize medical services more often than those who have only some trauma or no trauma experiences (Coker, 1999; Walker, 1999). Prior research has found that those who experience sexual abuse have more physical health problems, they utilize medical services more often, and they have higher annual medical costs than those who experience other traumas or no traumas at all.

The overall MANCOVA for psychological health was also significant for the random sample. The univariate tests for depression and sleep disturbance were

significant. Those females who had high levels of all the childhood trauma variables had higher levels of depression than those females who just had high levels of physical and psychological abuse and those females who had low levels of childhood trauma. Those females who had high levels of all the childhood trauma variables had higher levels of sleep disturbance than those females who just had high levels of physical and psychological abuse and those females who had low levels of childhood trauma.

Prior research has shown that individuals who have been abused during childhood tend to have higher levels of depression than those who were not abused (Cohen et al., 1994; Jaffe et al., 1986). Depression is especially prevalent for those who have experienced sexual abuse. Kendall-Tackett et al. (1993) found that individuals who had experienced sexual abuse had higher levels of depression than those who did not have a history of sexual abuse. Prior research has also shown that there is a link between trauma and sleeping problems (Dienemann, Boyle, Baker, Resnick, Wiederhorn, & Campbell, 2000; Hathaway, Mucci, Silverman, Brooks, Mathews, & Pavlos, 2000). The more severe the abuse the more psychological problems individuals suffer from (Dienemann et al., 2000).

Post-hoc univariate ANCOVAs were done on the dependent variables (physical health perception, health visits, dissociation, anxiety, and post-sexual abuse trauma) that in previous analyses did not show significance. All non-significant covariates were dropped from the analysis and only those covariates that had shown significance were left in. The results showed that there was still no significance for either physical health perception or health visits among cluster groups. These results are inconsistent with previous research that shows that individuals who were abused utilize medical

services more often and have a poorer perception of their overall physical health (Arnow et al., 1999; Coker et al., 1999).

For the psychological health variables all univariate anovas showed significance. Those females who had high levels of all the childhood trauma variables had higher levels of dissociation, anxiety, and post-sexual abuse trauma than those females who had low levels of childhood trauma. These results were consistent with previous research that had shown that individuals who had been exposed to trauma, especially multiple traumas, had higher levels of multiple psychological health problems than those individuals who had been exposed to low levels of trauma (Kendeall-Tackett et al., 1993; Roesler & McKenzie; Sanders & Giolas, 1991).

For the second sample, the overall MANCOVA for physical health was not significant. Only the physical health problems univariate test was significant showing that participants in the multiple trauma cluster had higher levels of physical health problems than participants in both the high physical and psychological abuse and the low childhood trauma clusters. Participants who had high levels of childhood trauma (physical, psychological, and sexual) had the worst physical health outcomes even compared to the participants with high physical and psychological abuse but low sexual abuse. These results are consistent with previous research that shows that those individuals who were sexually abused have the most physical health problems than those who were just physically and/or psychologically abused or those who were never abused (Berkowitz, 2000; Golding et al., 1988; Walker et al., 1999). Similar to the random sample, there were no significant differences for health perception or health visits.

The overall MANCOVA for psychological health was significant for the second sample. The univariate tests for dissociation and post-sexual abuse trauma were significant. Those participants who had high levels of all the childhood trauma variables had higher levels of dissociation than those participants who just had high levels of physical and psychological abuse and those participants who had low levels of childhood trauma. Those females who had high levels of all the childhood trauma variables had higher levels of post-sexual abuse trauma than those females who just had high levels of physical and psychological abuse and those females who had low levels of childhood trauma. These results are somewhat consistent with previous research that shows that individuals with high levels of childhood trauma, especially sexual abuse, have high levels of psychological problems such as depression, dissociation, and anxiety (Kendall-Tackett, Williams, & Finkelhor, 1993; Roesler & McKenzie, 1994).

Post-hoc univariate ANCOVAs were done on the dependent variables (physical health perception, health visits, depression, anxiety, and sleep disturbance) that in previous analyses did not show significance. All non-significant covariates were dropped from the analysis and only those covariates that had shown significance were left in. The results showed that there was still no significance for either physical health perception or health visits among cluster groups. There was also still no significant difference on dissociation or sleep disturbance between cluster groups; which was found in the previous sample. There was a significant difference between cluster groups on anxiety. Those females who had high levels of physical and psychological abuse and low levels of family functioning had higher levels of anxiety

than those females who had low levels of childhood trauma and high levels of family functioning.

The MANCOVA results were fairly consistent between the two samples. Both showed that there were no significant differences between cluster groups on physical health perception and number of health visits in past year. This result was inconsistent with previous research, that showed that those individuals with higher levels of trauma have poorer health perception and utilize medical services more often than those individuals who have low levels of trauma (Berkowitz, 2000; Golding et al., 1988; Walker et al., 1999). This lack of significance could be due to two things. *First*, physical health perception was measured with only one question. This could certainly skew the results. A standardized scale of health perception might have shown significance between the cluster groups. *Second*, the reliability of the health visits scale was only moderate (.63) and this might have affected the results. In both samples differences were shown between cluster groups on dissociation, anxiety, and post-sexual abuse trauma. Only in the sample of females were differences found between cluster groups on depression and sleep disturbance. The disparity between the samples could be due to the fact that in the second sample there were male participants as well as female participants. Males had shown low levels of depression and sleep disturbance compared to females and this could have affected the results.

These results were consistent with previous research that showed that those individuals with high levels of childhood trauma, especially sexual abuse, had higher levels of psychological health problems than those individuals with low levels of

childhood trauma (Kendall-Tackett, Williams, & Finkelhor, 1993; Roesler & McKenzie, 1994).

Summary of Conclusions

There are several conclusions that can be drawn from this study. *First*, there was some support of a mediational model of childhood trauma and health. Protective factors, in this case social support, external support, and internal support are important constructs in understanding the relationship between childhood trauma and adult health. For both females and males, there was evidence of a mediational relationship between these constructs.

Second, theories such as Taylor's (1983, 2000) theory of cognitive adaptation and Gondolf and Fischer's (1988) survivor theory, as well as Werner's (1988,1989) theories of protective factors were supported. All these theories show that protective factors such as social support and internal cognitive mechanisms are important mediators in the relationship between childhood trauma and adult health.

Third, there was much similarity between males and females and their relationship among these constructs. The only major differences were in terms of a direct relationship between childhood trauma and physical health and the relationship between social support and psychological health. For females the relationship between childhood trauma and physical health was significantly positive. For males this relationship was non-significant. For females the relationship between social support and psychological health was stronger than for males.

Fourth, these results showed that individuals who suffer multiple traumas had significantly more physical and psychological problems than those who suffer only

some trauma or no trauma at all; even when controlling for protective factors. Those individuals who suffer the most traumas have the highest levels of health problems and this is still the case even when there is evidence of protective factors. Those individuals who were exposed to sexual abuse as well as physical and psychological abuse suffer the most serious consequences.

Study Limitations

The present study offers several important findings to the literature. Yet, there are some limitations to the study as well. *First*, one limitation to the study is the use of retrospective methodology. Retrospective research is based on self-reported past experiences. In this study, participants were asked to recall their experiences with trauma and their relationships with their family during childhood. Retrospective research such as this can suffer from possible distortions in recall. For example, some of the participants may have failed to recall events that actually did occur. Either they could have legitimately forgotten or were ashamed or embarrassed by their childhood experiences and refused to endorse any of the negative childhood experiences. Also some participants might be more apt to recall past experiences of abuse if they are currently experiencing abuse now.

In terms of Health Outcomes, it might have been difficult for participants to remember every time they were sick over the past year. They might not remember every time they had a cold or a headache. They might under or over exaggerate the exact amount if they cannot remember accurately. Also, if they are experiencing illness or distress at the present time, they might be more apt to recall past illnesses and distress.

In retrospective studies is would be impossible to attempt to corroborate any information the participants may tell us about their past experiences. It would not be feasible or economical to have tracked down family and friends that could have corroborated these participants' experiences. We have to take what these participants say at face value, and believe that it is as accurate as it can be.

Second, another limitation is that the design of the study was cross-sectional rather than longitudinal. In order to accurately understand the interrelationships among the independent, mediating, and dependent constructs you would need to study individuals over a period of time. This would show you the actual strength of the mediating variables in the interrelationships. With longitudinal data, you would be more likely to show a causal path from childhood experiences to adulthood health problems through the mediating protective factors. Structural equation modeling is a multivariate technique that is well utilized with longitudinal data (Maruyama, 1998). In this study, the use of a cross-sectional design does not allow researchers to make causal statements about the findings. For example, we cannot actually say whether or not childhood experiences comes before protective factors or they co-occur or if protective factors comes first. Also, due to the fact that the majority of participants are in the 18-20 year old range and they were asked to recall childhood experiences up until age 18, there is a good chance that the majority of participants are responding to all the questions in the present tense.

Even though the use of cross-sectional data limits how one can draw conclusions from the results, it still provides significant and useful information. There are several benefits to structural equation modeling including: (1) the use of multiple indicators

per construct resulting in a robust way to explain a latent construct; (3) estimation of both measurement and prediction error; (3) examination of both direct and indirect effects; (4) investigation of complex, well-specified theoretical models; and (5) explicit depiction of predictions through the path analysis diagram and the writing of equations (Harlow, 1991).

Third, another limitation to this study is the use of only college students; the majority of who are female, white, catholic, single, and middle class. To get a more accurate picture of the interrelationships among these constructs, a more diverse sample of participants is needed. Using only college students may explain the low endorsement of sexual abuse and the relatively high endorsement of family functioning among participants. Also since the sample was overwhelmingly female, this could have skewed the results. Utilizing a large community sample of ethnically, socio-economically, diverse group of adult men and women will provide a better understanding of the interrelationships among these constructs. This sample of 451 college students is a small non-probability sample that cannot claim to be representative of all young adults. All the participants in this study volunteered. Other college students in the psychology courses and fraternities who were approached refused to participate. Their experiences might have impacted the results of the study.

Finally, the last limitation to this study was the use of some two-indicator mediating constructs. Due to the fact that Resiliency and Spirituality had only two manifest indicators they were unable to be successfully included in the first set of structural equation models. Resiliency was included in the revised models (labeled

Internal Support). Constructs with at least three manifest indicators work best in structural equation modeling. Since these two constructs were not used in all the SEM analyses, an incomplete picture of the interrelationships among childhood experiences, protective factors, and health outcomes was presented.

Implications

Even with the limitations mentioned above, there are several implications for intervention that can be derived from this study. *First*, interventions should be developed that address the issue of social support in a client's life. Addressing whether or not clients have a mentor that they can rely on as well utilizing those individuals in their lives as a means of support, can be helpful in overcoming trauma. Survivor theory (1988) suggests that individuals who have experienced trauma seek out rather than avoid support from others. Therapists should encourage their clients to utilize those individuals in their lives as a means of support or if they can not identify such individuals, the therapist can help them find people that they can rely on. Introducing them to community organizations, such as support groups, pastoral counseling, and other resources, can be beneficial to their clients.

Second, clinically based research needs to be done to assess the effectiveness of these interventions. Once the interventions are developed, research needs to be done on a clinical population of trauma victims. Comparisons between men and women as well as types of abuse experienced needs to be studied. Research shows that women tend to rely more on social support as a mechanism for dealing with trauma (Matuszek et al., 1995; Werner, 1988). Knowing that men might be more reluctant to utilize support from others will be important for the therapist to address during therapy.

Tailoring interventions for men and women might be necessary. Research done on clinical populations will be able to further support the link between social support and healthy adjustment.

Lastly, more empirically based and clinical research needs to be done addressing the importance of other protective factors as mediators in the relationship between trauma and health. Assessing which protective factors are most effective and are most able to be addressed during therapy, will enable researchers and therapists to design interventions that maximize the success of their clients.

Future Directions

One direction this research area needs to make is the jump from cross-sectional to longitudinal designs. Although we have learned important direct and indirect relationships among the constructs of this study, we are unable to decipher which constructs precede others and which constructs follow others. Following a group of children over time would help researchers fully understand the interrelationships among these constructs. They would be able to ascertain cause and effect relationships which could then lead to policy changes in the way we deal with trauma victims. It is important to note that this type of research would not only be a long, arduous process but also an expensive one. Ethical issues would also have to be addressed in terms of abuse reporting and disclosure of medical problems.

Another future direction would be the inclusion in this research of other important variables that could influence the interrelationships among these constructs. Including child neglect, and witnessing abuse might be useful. Separating out the childhood traumas could also be helpful. Looking at the traumas as separate constructs would

show which trauma(s) have the strongest relationships with the mediating and dependent constructs. Also, looking at other protective factors such as temperament and IQ could be beneficial. Other health outcomes such as substance misuse and sexual risk taking could also be included.

Another important direction in this research would be to investigate these variables using qualitative methodology. Qualitative methodology offers researchers a richer and deeper understanding of the relationships among variables. It is based on methods of data generation which are flexible and sensitive to the social context in which data are produced, rather than rigidly standardized or structured, or removed from 'real life' or 'natural' social context, as in some forms of experimental method (Mason, 1996). Instead of using standardized scales of childhood trauma, protective factors, and health, researchers can gather information on these constructs in a natural setting using qualitative methodologies such as focus groups or qualitative interviewing.

Finally, it is important to study these variables in more diverse samples to get an accurate picture of their interrelationships. A more diverse sample in terms of ethnicity and socio-economic status might show very different results from what was found here.

Table 1. Demographic Characteristics

Characteristic	*% Female (N=341)*	*% Male (N=110)*	*% Total (N=451)*
Race			
White	89.7 (306)	87.3 (96)	89.1 (402)
Black	4.1 (14)	1.8 (2)	3.5 (16)
Native American	.3 (1)	.9 (1)	0.4 (2)
Asian	1.2 (4)	3.6 (4)	1.8 (8)
Hispanic	2.9 (10)	3.6 (4)	3.1 (14)
Other	3.5 (12)	1.8 (2)	3.1 (14)
Age			
18 years old	49.3 (168)	42.6 (46)	47.7 (214)
19 years old	29.0 (99)	29.6 (32)	29.2 (131)
20 years old	10.6 (36)	16.7 (18)	12.0 (54)
21 years old	7.9 (27)	9.3 (10)	8.2 (37)
Other	3.2 (11)	1.9 (2)	2.9 (13)
Year			
First Year	50.3 (171)	47.7 (52)	49.7 (223)
Sophomore	31.2 (106)	30.3 (33)	31.0 (139)
Junior	12.9 (44)	17.4 (19)	14.0 (63)
Senior	5.6 (19)	4.6 (5)	5.3 (24)
Graduate Student	0.0 (0)	0.0 (0)	0.0 (0)
Living Situation			
On-campus	65.1 (222)	52.7 (58)	62.1 (280)
Greek House	6.7 (23)	21.8 (24)	10.4 (47)
Own apartment	18.5 (63)	14.5 (16)	17.5 (79)
Parents	7.9 (27)	10.0 (11)	8.4 (38)
Other	1.8 (6)	.9 (1)	1.6 (7)
Family Income			
Less than 10,000	1.5 (5)	1.8 (2)	1.6 (7)
10,000 to 19,999	1.8 (6)	4.6 (5)	2.4 (11)
20,000 to 34,999	8.5 (29)	2.8 (3)	7.1 (32)
35,000 to 50,000	13.2 (45)	11.0 (12)	12.7 (57)
Over 50,000	46.2 (157)	48.6 (53)	46.8 (210)
Don't Know	28.8 (98)	31.2 (34)	29.4 (132)
Religion			
Catholic	54.4 (185)	41.7 (45)	51.3 (230)
Protestant	14.1 (48)	12.0 (13)	13.6 (61)
Jewish	10.3 (35)	14.8 (16)	11.4 (51)
Muslim	0.0 (0)	.9 (1)	.20 (1)
Other	11.2 (38)	8.3 (9)	10.5 (47)
None	10.0 (34)	22.2 (24)	12.9 (58)

Table 2. Factor Loadings and Reliability of Scales N=200 Females

Construct Variable	*Factor Loading*	*Scale Reliability**
Childhood Trauma		
Physical Abuse	.79	.88
Psychological Abuse	.86	.89
Sexual Abuse	.30	.93
Family Functioning		
Positive Affect	.85	.90
Family Conflicts	-.45	.82
Communication	.64	.84
Resiliency		
Personal Competence	.70	.83
Acceptance of Self and Life	.70	.65
Spirituality		
Spiritual Involvement	.71	.96
Connection to Others	.71	.54
Social Support		
Community Support	.61	.96
Family Support	.76	.97
Peer Support	.58	.96
Physical Health		
Health Perception	.79	N/A[1]
Health Visits	.66	.60
Health Problems	.85	.81
Psychological Health		
Dissociation	.88	.71
Anxiety	.78	.74
Depression	.89	.76
Post-Sexual Abuse Trauma	.86	.61
Sleep Disturbance	.74	.73

*Cronbach's Alpha
[1]One-item indicator

Table 3. Factor Loadings and Reliability of Scales N=451 Young Adults

Construct Variable	*Factor Loading*	*Scale Reliability**
Childhood Trauma		
Physical Abuse	.88	.88
Psychological Abuse	.89	.90
Sexual Abuse	.57	.92
Family Functioning		
Positive Affect	.84	.88
Family Conflicts	- .72	.81
Communication	.75	.82
Resiliency		
Personal Competence	.89	.85
Acceptance of Self and Life	.89	.68
Spirituality		
Spiritual Involvement	.74	.96
Connection to Others	.74	.53
Social Support		
Community Support	.79	.96
Family Support	.80	.97
Peer Support	.83	.96
Physical Health		
Health Perception	.70	N/A[1]
Health Visits	.73	.63
Health Problems	.85	.82
Psychological Health		
Dissociation	.87	.75
Anxiety	.82	.73
Depression	.89	.77
Post-Sexual Abuse Trauma	.88	.67
Sleep Disturbance	.76	.71

*Cronbach's Alpha
[1]One-item indicator

Table 4. Descriptive Statistics N = 451

Construct *Variable*	*Mean*	*Standard Deviation*	*Minimum/ Maximum*	*Skewness*	*Kurtosis*
Childhood Trauma					
Physical Abuse	10.06	7.06	0-33	.59	-.06
Psychological Abuse	15.37	8.11	0-33	.02	-.74
Sexual Abuse*	2.04 (.73)	4.15 (1.23)	0-21	2.33 (1.44)	5.13 (.74)
Family Functioning					
Positive Affect	3.42	.55	1.3-4	-1.24	1.28
Family Conflicts	1.81	.60	0-4	.281	1.07
Communication	2.07	.80	0-4	.11	-.21
Resiliency					
Personal Competence	3.17	.33	1.94-4	.34	.21
Acceptance of Self and Life	3.02	.39	1.83-4	.04	.04
Spirituality					
Spiritual Involvement	2.47	.62	1-4	-.18	.04
Connection to Others	3.17	.46	1.33-4	-.23	.16
Social Support					
Community Support	23.39	7.74	0-32	-.62	-.57
Family Support	26.83	7.34	2-32	-1.48	1.33
Peer Support	27.62	6.00	6-32	-1.44	1.58
Physical Health					
Health Perception	1.89	.63	1-4	.19	-.04
Health Visits	6.59	5.07	0-25	1.33	1.35
Health Problems	30.31	18.29	0-86	.85	.32
Psychological Health					
Dissociation	.59	.50	0-2.67	1.40	2.26
Anxiety	.48	.38	0-2.67	1.49	3.44
Depression	.62	.44	0-2.67	1.39	2.40
Post-Sexual Abuse Trauma	.42	.40	0-2.5	1.57	3.09
Sleep Disturbance	.83	.55	0-3	.93	1.33

***Transformed Variable: Original value is given with square root transformation in parentheses. The transformed value was used in the analyses.**

Table 5. Correlations Among Latent Constructs N = 451 Young Adults

	Child Trauma	*Family Functioning*	*Resiliency*	*Spirituality*	*Social Support*	*Physical Health*	*Psychological Health*
Child Trauma	1.0						
Family Functioning	-.43 ***	1.0					
Resiliency	-.19 ***	.39 ***	1.0				
Spirituality	-.10 *	.19 ***	.25 ***	1.0			
Social Support	-.22 ***	.57 ***	.36 ***	.20 ***	1.0		
Physical Health	.29 ***	-.23 ***	-.30 ***	.04 n.s.	-.13 **	1.0	
Psychological Health	.42 ***	-.38 ***	-.40 ***	-.05 n.s.	-.29 ***	.63 ***	1.0

Significance *p<.05, **p<.01, ***p<.001, n.s. = not significant

Table 6. Correlations Among Latent Constructs N = 110 Young Adult Males

	Child Trauma	*Family Functioning*	*Resiliency*	*Spirituality*	*Social Support*	*Physical Health*	*Psychological Health*
Child Trauma	1.0						
Family Functioning	-.42 ***	1.0					
Resiliency	-.21 ***	.56 ***	1.0				
Spirituality	-.19 n.s.	.36 ***	.30 **	1.0			
Social Support	-.20 n.s.	.60 ***	.34 ***	.03 n.s.	1.0		
Physical Health	.25 *	-.27 *	-.32 **	.24 *	-.17 n.s.	1.0	
Psychological Health	.34 **	-.38 ***	-.38 ***	-.01 n.s.	-.26 **	.71 ***	1.0

Significance *p<.05, **p<.01, ***p<.001, n.s. = not significant

Table 7. Correlations Among Latent Constructs N = 341 Young Adult Females

	Child Trauma	*Family Functioning*	*Resiliency*	*Spirituality*	*Social Support*	*Physical Health*	*Psychological Health*
Child Trauma	1.0						
Family Functioning	-.43 ***	1.0					
Resiliency	-.20 **	.35 ***	1.0				
Spirituality	-.05 n.s.	.12 *	.27 ***	1.0			
Social Support	-.23 ***	.56 ***	.42 ***	.24 ***	1.0		
Physical Health	.33 ***	-.24 ***	-.27 ***	-.09 n.s.	-.17 **	1.0	
Psychological Health	.46 ***	-.40 ***	-.39 ***	-.11 n.s.	-.36 ***	.60 ***	1.0

Significance *p<.05, **p<.01, ***p<.001, n.s. = not significant

Table 8: Overall MANOVA Results for Males and Females

Latent Construct	*F value*	*df*	*p value*	*(λ)*	*(η^2)*	*Power*
Childhood Trauma	13.72	3,389	***	.904	.10	1.00
Family Functioning	2.85	3,412	*	.980	.02	.68
Resiliency	3.45	2,429	*	.984	.02	.65
Spirituality	9.18	2,416	***	.958	.04	.98
Social Support	9.61	3,441	***	.939	.06	1.00
Physical Health	3.23	3,337	*	.975	.03	.74
Psychological Health	4.91	5,413	***	.944	.06	.98

Note: df = degrees of freedom; *p<.05, **p<.01, ***p<.001; λ=Wilks' lambda; 1-$\lambda=\eta^2$ (eta-squared) or amount of shared variance between gender and the dependent variables.

Table 9. Univariate Tests for Females and Males

Construct Variables	*Females: Mean (SD)*	*Males: Mean (SD)*	*F value*	*df*	η^2
Childhood Trauma					
Physical Abuse	9.43 (6.85)	12.35 (7.44)	12.43***	1, 391	.03
Psychological Abuse	15.56 (7.90)	14.45 (8.79)	1.32	1, 391	.00
Sexual Abuse	.72 (1.24)	.72 (1.11)	.003	1, 391	.00
Family Functioning					
Positive Affect	3.43 (.54)	3.43 (.57)	.002	1, 414	.00
Family Conflicts	1.80 (.59)	1.89 (.62)	1.87	1, 414	.00
Communication	2.13 (.81)	1.92 (.76)	5.46*	1, 414	.01
Resiliency					
Personal Competence	3.16 (.31)	3.21 (.36)	1.81	1, 430	.00
Acceptance of Self/Life	3.00 (.37)	3.11 (.42)	6.87**	1, 430	.02
Spirituality					
Spiritual Involvement	2.51 (.60)	2.34 (.67)	6.11*	1, 417	.01
Connection to Others	3.22 (.45)	3.02 (.49)	13.63***	1, 417	.03
Social Support					
Community Support	24.20 (7.37)	21.06 (8.36)	13.84***	1, 443	.03
Family Support	27.07 (7.25)	26.13 (7.58)	1.33	1, 443	.00
Peer Support	28.36 (5.24)	25.29 (19.18)	22.28***	1, 443	.05
Physical Health					
Health Perception	1.88 (.59)	1.83 (.64)	.384	1, 379	.00
Health Visits	6.72 (5.00)	5.33 (4.83)	5.36*	1, 379	.01
Health Problems	31.89 (17.84)	25.70 (19.18)	7.93**	1, 379	.02
Psychological Health					
Dissociation	.61 (.50)	.54 (.51)	1.47	1, 417	.00
Anxiety	.51 (.39)	.36 (.34)	12.22**	1, 417	.03
Depression	.67 (.45)	.47 (.39)	16.91***	1, 417	.04
Post-Sex Abuse Trauma	.44 (.40)	.37 (.40)	2.38	1, 417	.01
Sleep Disturbance	.88 (.57)	.68 (.47)	9.98**	1, 417	.02

Significance (*p<.05, **p<.01, ***p<.001); η^2 (eta-squared) or amount of shared variance between gender and dependent variable.

Table 10. Summary of Structural Equation Model Findings – Females

Model	X^2	*df*	*CFI*	*AASR*	X^2 *Difference (df)*
Full	453.29	109	.86	.04	-------
Direct	632.17	113	.79	.08	178.88 (4)***
Mediational	510.40	113	.84	.06	57.11 (4) ***

Chi-square difference test: The Full Model minus each model. Significance (***p<.001)

Table 11. Summary of Structural Equation Model Findings – Male Participants

Model	X^2	*df*	*CFI*	*AASR*	X^2 *Difference (df)*
Full	239.87	109	.86	.06	-------
Direct	294.45	113	.80	.10	54.58 (4)***
Mediational	247.93	113	.85	.07	8.06 (4) ns

Chi-square difference test: The Full Model minus each model. Significance (***p<.001, n.s. = not significant)

Table 12. Cluster Analysis Results N = 200 Young Adult Females

Cluster Solution	*# in Cluster*
2 Cluster Solution	
High Child Trauma/Low Family Functioning	73
Low Child Trauma/High Family Functioning	127
3 Cluster Solution*	
High Physical/Psychological/Low Sexual and Low FF	51
High Child Trauma/Moderate Family Functioning	40
Low Child Trauma/High Family Functioning	109
4 Cluster Solution	
High Child Trauma/Low Family Functioning	5
High Child Trauma/Moderate Family Functioning	37
High Child Trauma/High Family Functioning	80
Low Child Trauma/High Family Functioning	78

*Determined to be best solution. This cluster solution was used in further analyses.

Table 13. Cluster Analysis Results N = 220 Young Adults

Cluster Solution	*# in Cluster*
2 Cluster Solution	
High Child Trauma/Low Family Functioning	111
Low Child Trauma/High Family Functioning	109
3 Cluster Solution*	
High Physical/Psychological/Low Sexual and Low FF	81
High Child Trauma/Moderate Family Functioning	42
Low Child Trauma/High Family Functioning	97
4 Cluster Solution	
High Physical/Psychological/Low Sexual and FF	80
Low Child Trauma/Low Family Functioning	53
High Child Trauma/Moderate Family Functioning	41
Low Child Trauma/High Family Functioning	46

*Determined to be best solution. This cluster solution was used in further analyses.

Table 14. 3 Cluster Solution Means and Standard Deviations N = 200 Females

	Mean	*Standard Deviation*
Physical Health Perception		
High Physical + Psychological/Low Sex + Family Functioning	1.95	.53
High Child Trauma/Moderate Family Functioning	1.94	.54
Low Child Trauma/High Family Functioning	1.83	.65
Health Visits		
High Physical + Psychological/Low Sex + Family Functioning	7.31	5.04
High Child Trauma/Moderate Family Functioning	7.17	4.58
Low Child Trauma/High Family Functioning	5.87	4.66
Physical Health Problems*		
High Physical + Psychological/Low Sex + Family Functioning	33.86	16.95
High Child Trauma/Moderate Family Functioning	38.76	21.10
Low Child Trauma/High Family Functioning	28.46	15.83
Dissociation		
High Physical + Psychological/Low Sex + Family Functioning	.68	.48
High Child Trauma/Moderate Family Functioning	.80	.61
Low Child Trauma/High Family Functioning	.50	.42
Anxiety		
High Physical + Psychological/Low Sex + Family Functioning	.56	.38
High Child Trauma/Moderate Family Functioning	.65	.42
Low Child Trauma/High Family Functioning	.44	.39
Depression*		
High Physical + Psychological/Low Sex + Family Functioning	.81	.44
High Child Trauma/Moderate Family Functioning	.89	.50
Low Child Trauma/High Family Functioning	.53	.36
Post-Sexual Abuse Trauma		
High Physical + Psychological/Low Sex + Family Functioning	.52	.39
High Child Trauma/Moderate Family Functioning	.56	.41
Low Child Trauma/High Family Functioning	.33	.33
Sleep Disturbance*		
High Physical + Psychological/Low Sex + Family Functioning	1.07	.56
High Child Trauma/Moderate Family Functioning	1.16	.69
Low Child Trauma/High Family Functioning	.72	.46

Dependent constructs are in bold. * Indicates where there is a significant difference among cluster groups.

Table 15. Physical Health MANCOVA Results N = 200 Young Adult Females

Covariates/Cluster Variable	*F value*	*df*	*Eta-squared (η^2)*
PHYSICAL HEALTH PERCEPTION			
Resiliency			
Personal Competence	5.65*	1, 143	.04
Acceptance of Self/Life	.17	1, 143	.00
Spirituality			
Spiritual Involvement	.29	1, 143	.00
Connection to Others	1.37	1, 143	.01
Social Support			
Community Support	.21	1, 143	.00
Family Support	.94	1, 143	.01
Peer Support	.43	1, 143	.00
Cluster3	.76	2, 143	.01
HEALTH VISITS			
Resiliency			
Personal Competence	1.38	1, 143	.01
Acceptance of Self/Life	4.70*	1, 143	.03
Spirituality			
Spiritual Involvement	1.11	1, 143	.01
Connection to Others	.97	1, 143	.01
Social Support			
Community Support	5.11*	1, 143	.03
Family Support	.01	1, 143	.00
Peer Support	2.59	1, 143	.01
Cluster3	1.19	2, 143	.01
PHYSICAL HEALTH PROBLEMS			
Resiliency			
Personal Competence	.31	1, 143	.00
Acceptance of Self/Life	1.53	1, 143	.01
Spirituality			
Spiritual Involvement	1.60	1, 143	.01
Connection to Others	.01	1, 143	.00
Social Support			
Community Support	.21	1, 143	.00
Family Support	.03	1, 143	.00
Peer Support	.12	1, 143	.00
Cluster3	3.57*	2, 143	.05

Dependent Constructs are in Bold. Significance (*p<.05, **p<.01, ***p<.001); η^2 (eta-squared) or amount of shared variance between covariate/construct and dependent variable.

Table 16. Psychological Health MANCOVA Results N = 200 Young Adult Females

Covariates/Cluster Variable	*F value*	*df*	*Eta-squared (η^2)*
DISSOCIATION			
Resiliency			
Personal Competence	1.85	1,154	.01
Acceptance of Self/Life	4.16*	1,154	.03
Spirituality			
Spiritual Involvement	.045	1,154	.00
Connection to Others	3.27	1,154	.02
Social Support			
Community Support	4.53*	1,154	.03
Family Support	3.10	1,154	.02
Peer Support	.06	1,154	.00
Cluster3	1.85	2, 154	.02
ANXIETY			
Resiliency			
Personal Competence	.31	1,154	.00
Acceptance of Self/Life	5.44*	1,154	.03
Spirituality			
Spiritual Involvement	.26	1,154	.00
Connection to Others	.75	1,154	.01
Social Support			
Community Support	.41	1,154	.00
Family Support	.84	1,154	.01
Peer Support	.94	1,154	.01
Cluster3	2.54	2, 154	.03
DEPRESSION			
Resiliency			
Personal Competence	.23	1,154	.00
Acceptance of Self/Life	21.43***	1,154	.12
Spirituality			
Spiritual Involvement	2.29	1,154	.02
Connection to Others	.99	1,154	.01
Social Support			
Community Support	3.20	1,154	.02
Family Support	.24	1,154	.00
Peer Support	2.32	1,154	.02
Cluster3	8.57***	2, 154	.10
POST-SEXUAL ABUSE TRAUMA			
Resiliency			
Personal Competence	1.76	1,154	.01
Acceptance of Self/Life	5.83*	1,154	.04
Spirituality			
Spiritual Involvement	1.68	1,154	.01

Connection to Others	2.19	1,154	.01
Social Support			
Community Support	4.47*	1,154	.03
Family Support	.96	1,154	.01
Peer Support	2.58	1,154	.02
Cluster3	2.54	2, 154	.03
SLEEP DISTURBANCE			
Resiliency			
Personal Competence	.13	1,154	.00
Acceptance of Self/Life	3.56	1,154	.02
Spirituality			
Spiritual Involvement	.44	1,154	.00
Connection to Others	.71	1,154	.01
Social Support			
Community Support	2.20	1,154	.01
Family Support	.59	1,154	.00
Peer Support	.38	1,154	.00
Cluster3	6.72**	2, 154	.08

Dependent Constructs are in Bold. Significance (*p<.05, **p<.01, ***p<.001); η^2 (eta-squared) or amount of shared variance between covariate/construct and dependent variable.

Table 17. 3 Cluster Solution Means and Standard Deviations N = 220 Adults

	Mean	*Standard Deviation*
Physical Health Perception		
High Physical + Psychological/Low Sex + Family Functioning	1.94	.63
High Child Trauma/Moderate Family Functioning	1.93	.64
Low Child Trauma/High Family Functioning	1.74	.56
Health Visits		
High Physical + Psychological/Low Sex + Family Functioning	6.88	5.20
High Child Trauma/Moderate Family Functioning	7.74	5.75
Low Child Trauma/High Family Functioning	5.57	4.73
Physical Health Problems*		
High Physical + Psychological/Low Sex + Family Functioning	31.40	17.80
High Child Trauma/Moderate Family Functioning	33.41	19.38
Low Child Trauma/High Family Functioning	24.18	14.96
Dissociation*		
High Physical + Psychological/Low Sex + Family Functioning	.70	.58
High Child Trauma/Moderate Family Functioning	.75	.55
Low Child Trauma/High Family Functioning	.42	.39
Anxiety		
High Physical + Psychological/Low Sex + Family Functioning	.51	.43
High Child Trauma/Moderate Family Functioning	.49	.42
Low Child Trauma/High Family Functioning	.34	.25
Depression		
High Physical + Psychological/Low Sex + Family Functioning	.65	.51
High Child Trauma/Moderate Family Functioning	.59	.47
Low Child Trauma/High Family Functioning	.49	.32
Post-Sexual Abuse Trauma*		
High Physical + Psychological/Low Sex + Family Functioning	.53	.52
High Child Trauma/Moderate Family Functioning	.47	.43
Low Child Trauma/High Family Functioning	.28	.30
Sleep Disturbance		
High Physical + Psychological/Low Sex + Family Functioning	.86	.55
High Child Trauma/Moderate Family Functioning	.82	.59
Low Child Trauma/High Family Functioning	.65	.44

Dependent constructs are in bold. * Indicates where there is a significant difference among cluster groups.

Table 18. Physical Health MANCOVA Results N = 220 Young Adults

Covariates/Cluster Variable	*F value*	*df*	*Eta-squared* (η^2)
PHYSICAL HEALTH PERCEPTION			
Resiliency			
Personal Competence	5.85*	1, 210	.03
Acceptance of Self/Life	.17	1, 210	.00
Spirituality			
Spiritual Involvement	1.77	1, 210	.01
Connection to Others	2.10	1, 210	.01
Social Support			
Community Support	.41	1, 210	.00
Family Support	.51	1, 210	.00
Peer Support	.00	1, 210	.00
Cluster3	.86	2, 210	.01
HEALTH VISITS			
Resiliency			
Personal Competence	.25	1, 210	.00
Acceptance of Self/Life	5.05*	1, 210	.02
Spirituality			
Spiritual Involvement	6.10*	1, 210	.03
Connection to Others	2.93	1, 210	.01
Social Support			
Community Support	3.20	1, 210	.02
Family Support	.48	1, 210	.00
Peer Support	.00	1, 210	.00
Cluster3	2.96	2, 210	.03
PHYSICAL HEALTH PROBLEMS			
Resiliency			
Personal Competence	2.25	1, 210	.01
Acceptance of Self/Life	2.35	1, 210	.01
Spirituality			
Spiritual Involvement	2.33	1, 210	.01
Connection to Others	2.62	1, 210	.01
Social Support			
Community Support	1.55	1, 210	.01
Family Support	5.60*	1, 210	.03
Peer Support	.01	1, 210	.00
Cluster3	3.30*	2, 210	.03

Dependent Constructs are in Bold. Significance (*p<.05, **p<.01, ***p<.001); η^2 (eta-squared) or amount of shared variance between covariate/construct and dependent variable.

Table 19. Psychological Health MANCOVA Results N = 220 Young Adults

Covariates/Cluster Variable	*F value*	*df*	*Eta-squared* (η^2)
DISSOCIATION			
Resiliency			
Personal Competence	.03	1, 210	.00
Acceptance of Self/Life	7.48**	1, 210	.03
Spirituality			
Spiritual Involvement	1.15	1, 210	.01
Connection to Others	.26	1, 210	.00
Social Support			
Community Support	.04	1, 210	.00
Family Support	1.69	1, 210	.01
Peer Support	1.55	1, 210	.01
Cluster3	4.71**	2, 210	.04
ANXIETY			
Resiliency			
Personal Competence	.03	1, 210	.00
Acceptance of Self/Life	11.67**	1, 210	.05
Spirituality			
Spiritual Involvement	1.51	1, 210	.01
Connection to Others	.09	1, 210	.00
Social Support			
Community Support	.00	1, 210	.00
Family Support	2.55	1, 210	.01
Peer Support	.19	1, 210	.00
Cluster3	2.39	2, 210	.02
DEPRESSION			
Resiliency			
Personal Competence	.00	1, 210	.00
Acceptance of Self/Life	26.91***	1, 210	.11
Spirituality			
Spiritual Involvement	.38	1, 210	.00
Connection to Others	1.01	1, 210	.01
Social Support			
Community Support	.01	1, 210	.00
Family Support	2.80	1, 210	.01
Peer Support	.22	1, 210	.00
Cluster3	.39	2, 210	.00
POST-SEXUAL ABUSE TRAUMA			
Resiliency			
Personal Competence	.13	1, 210	.00
Acceptance of Self/Life	10.84**	1, 210	.05
Spirituality			
Spiritual Involvement	.25	1, 210	.00

Connection to Others	.09	1, 210	.00
Social Support			
Community Support	.66	1, 210	.00
Family Support	1.89	1, 210	.01
Peer Support	.58	1, 210	.00
Cluster3	4.19*	2, 210	.04
SLEEP DISTURBANCE			
Resiliency			
Personal Competence	.85	1, 210	.00
Acceptance of Self/Life	7.40**	1, 210	.03
Spirituality			
Spiritual Involvement	.01	1, 210	.00
Connection to Others	.11	1, 210	.00
Social Support			
Community Support	.13	1, 210	.00
Family Support	.16	1, 210	.00
Peer Support	.08	1, 210	.00
Cluster3	1.37	2, 210	.01

Dependent Constructs are in Bold. Significance (*p<.05, **p<.01, ***p<.001); η^2 (eta-squared) or amount of shared variance between covariate/construct and dependent variable.

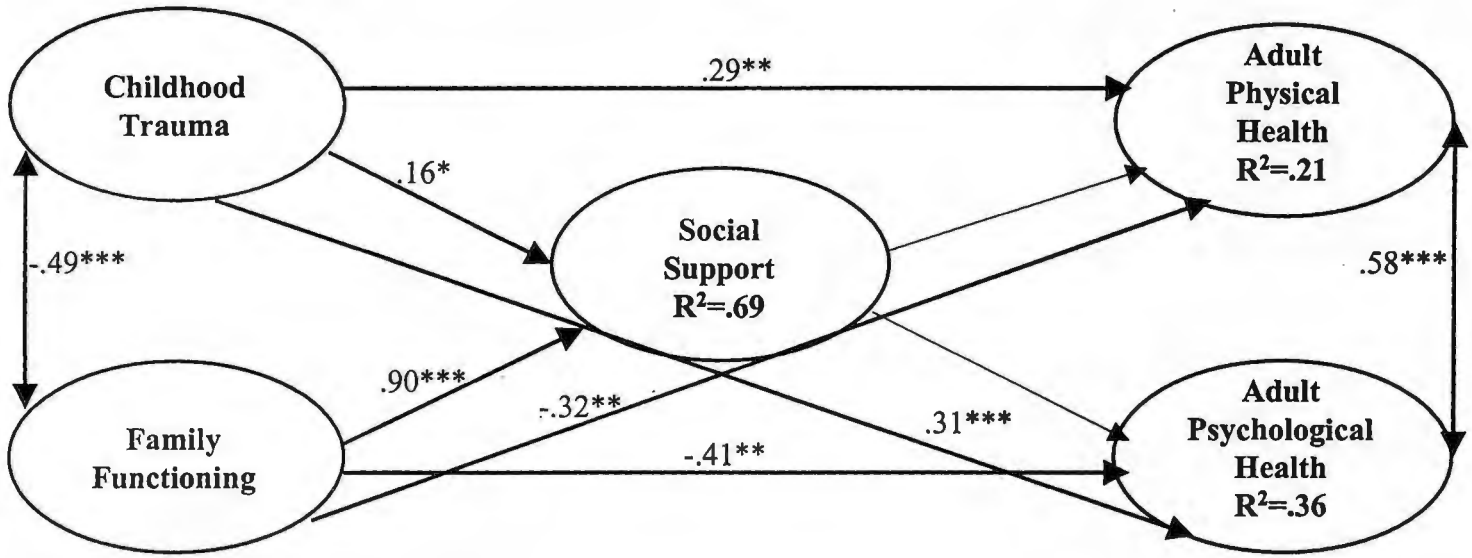

Figure 1: Full Model of childhood trauma, family functioning, social support, adult physical health, and adult psychological health with standardized maximum likelihood parameter estimates (*p<.05, **p<.01, ***p<.001). Non-bold lines are non-significant. X^2 (109)=453.29, CFI=.86 , AASR=.04, N=341 young female adults. All factor loadings significant at p<.001 or better.

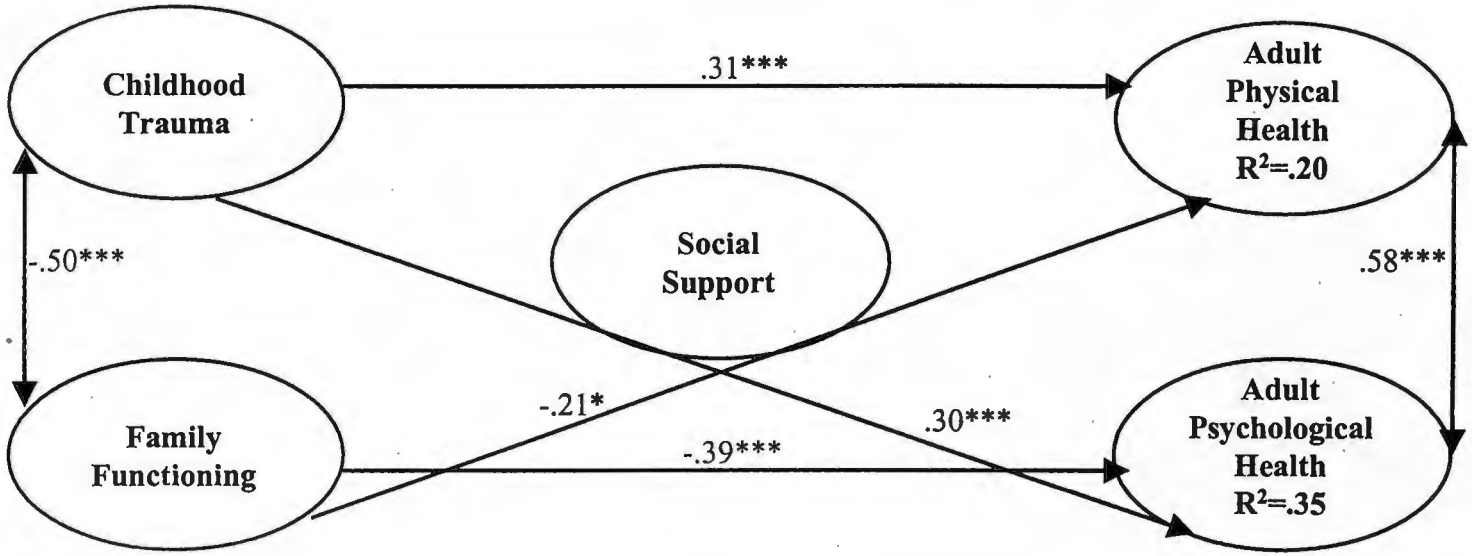

Figure 2: Direct Model of childhood trauma, family functioning, social support, adult physical health, and adult psychological health with standardized maximum likelihood parameter estimates (*p<.05, **p<.01, ***p<.001). Non-bold lines are non-significant. X^2 (113)=632.17, CFI=.79 , AASR=.08, N=341 young female adults. All factor loadings significant at p<.001 or better.

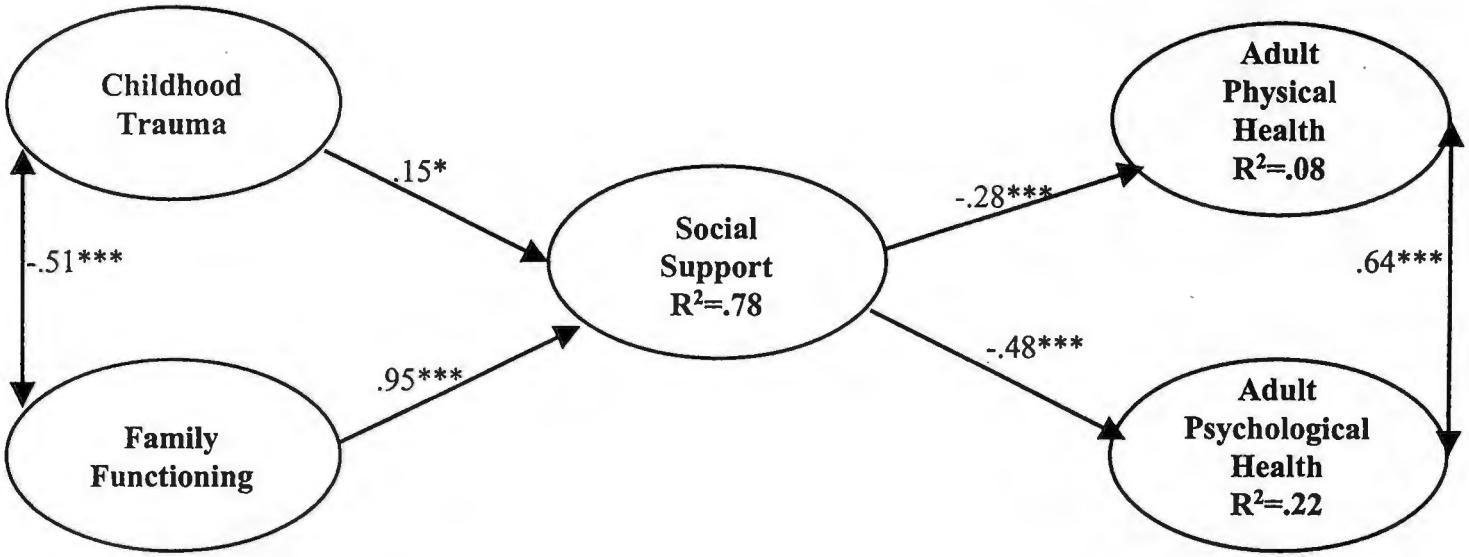

Figure 3: Mediational Model of childhood trauma, family functioning, social support, adult physical health, and adult psychological health with standardized maximum likelihood parameter estimates (*p<.05, **p<.01, ***p<.001). Non-bold lines are non-significant. X^2 (113)=510.40, CFI=.84 , AASR=.06, N=341 young female adults. All factor loadings significant at p<.001 or better.

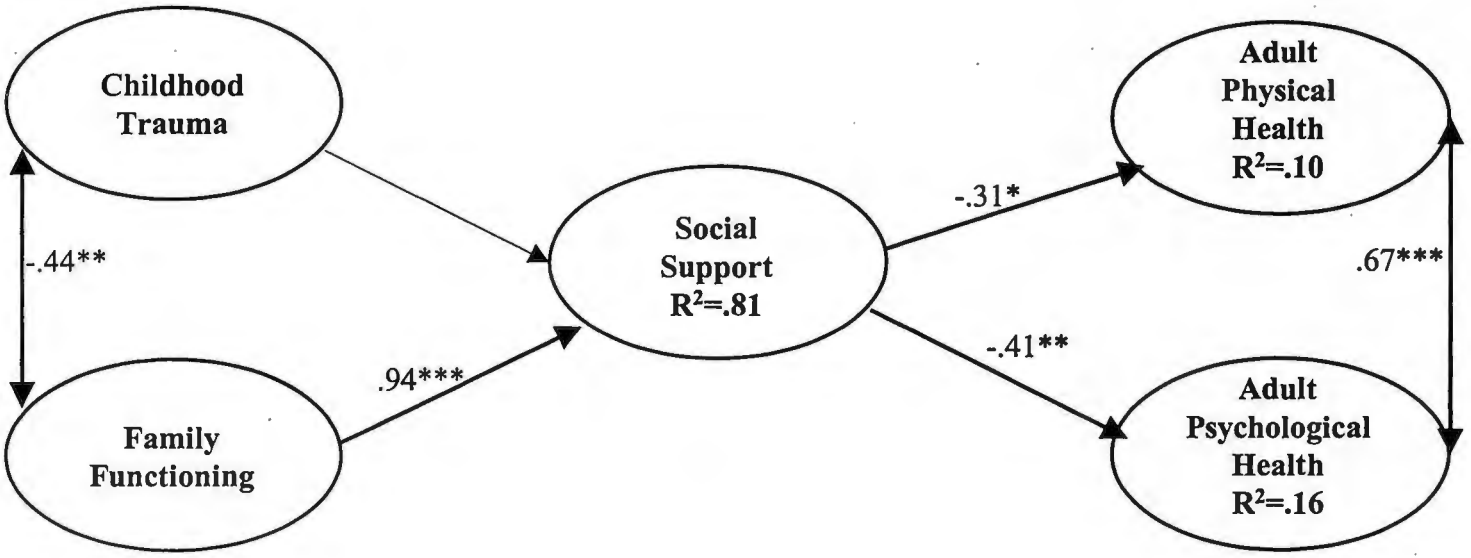

Figure 7: Mediational Model of childhood trauma, family functioning, social support, adult physical health, and adult psychological health with standardized maximum likelihood parameter estimates (*p<.05, **p<.01, ***p<.001). Non-bold lines are non-significant. X^2 (113)=247.93, CFI=.85 , AASR=.07, N=110 young male adults. All factor loadings significant at p<.001 or better.

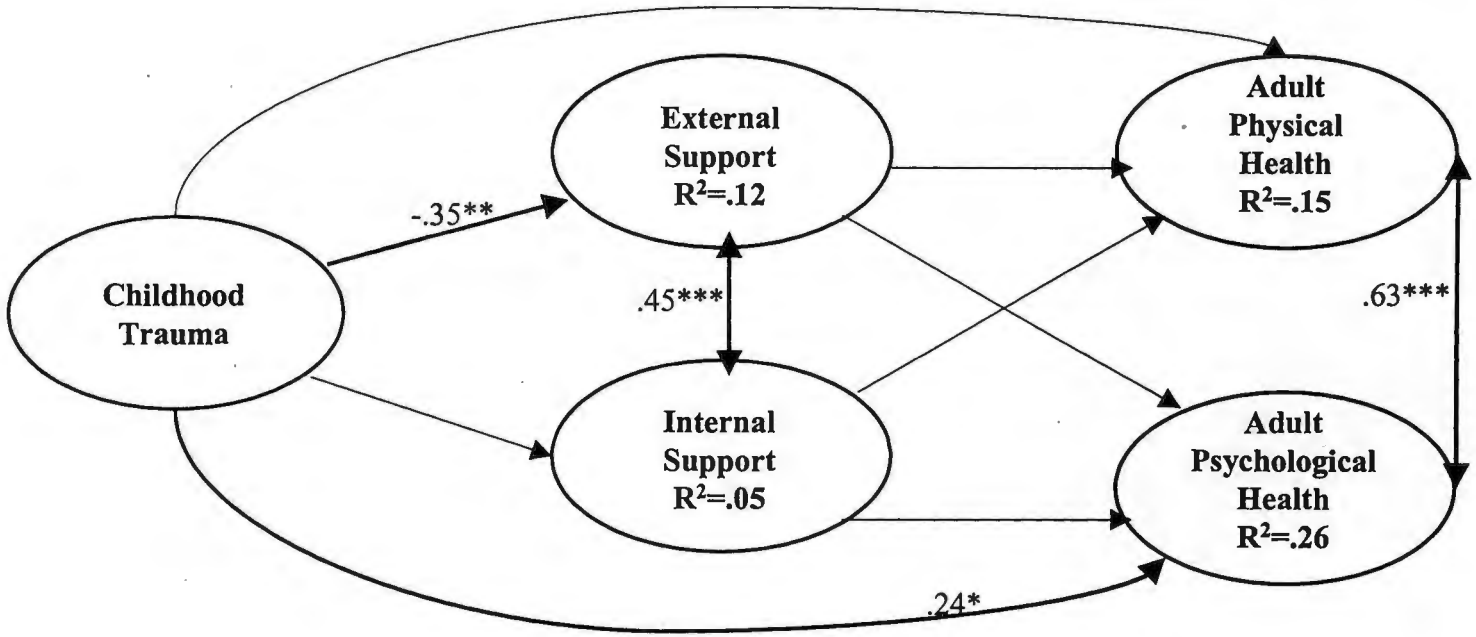

Figure 8: Revised Model of childhood trauma, external support, internal support, adult physical health, and adult psychological health with standardized maximum likelihood parameter estimates (*p<.05, **p<.01, ***p<.001). Non-bold lines are non-significant. X^2 (142)=306.23, CFI=.84 , AASR=.06, N=110 young male adults. All factor loadings significant at p<.001 or better.

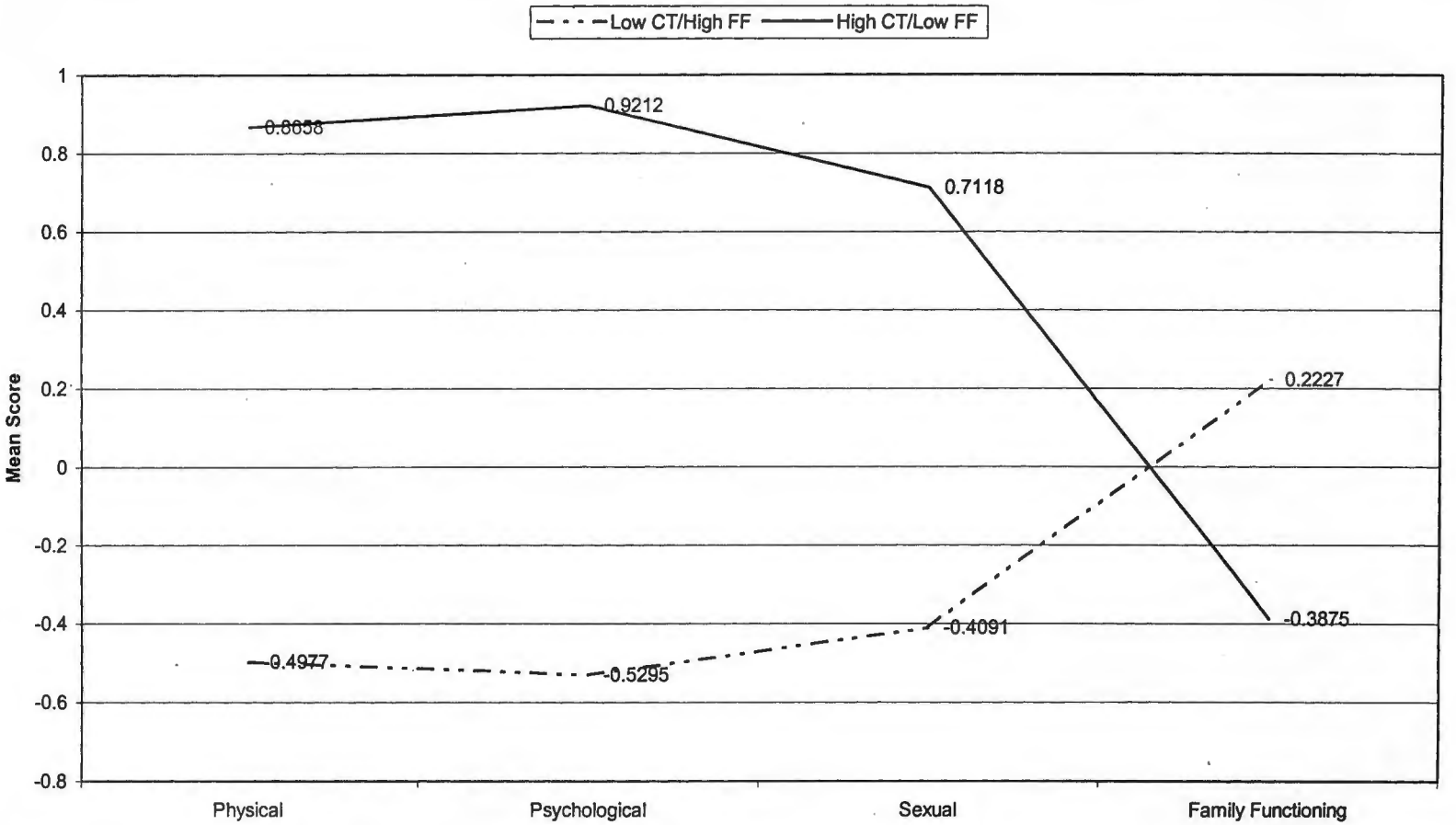

Figure 9: Standardized means for childhood physical abuse, childhood psychological abuse, childhood sexual abuse, and family functioning variables for 2 Cluster solution. N = 200 young female adults.

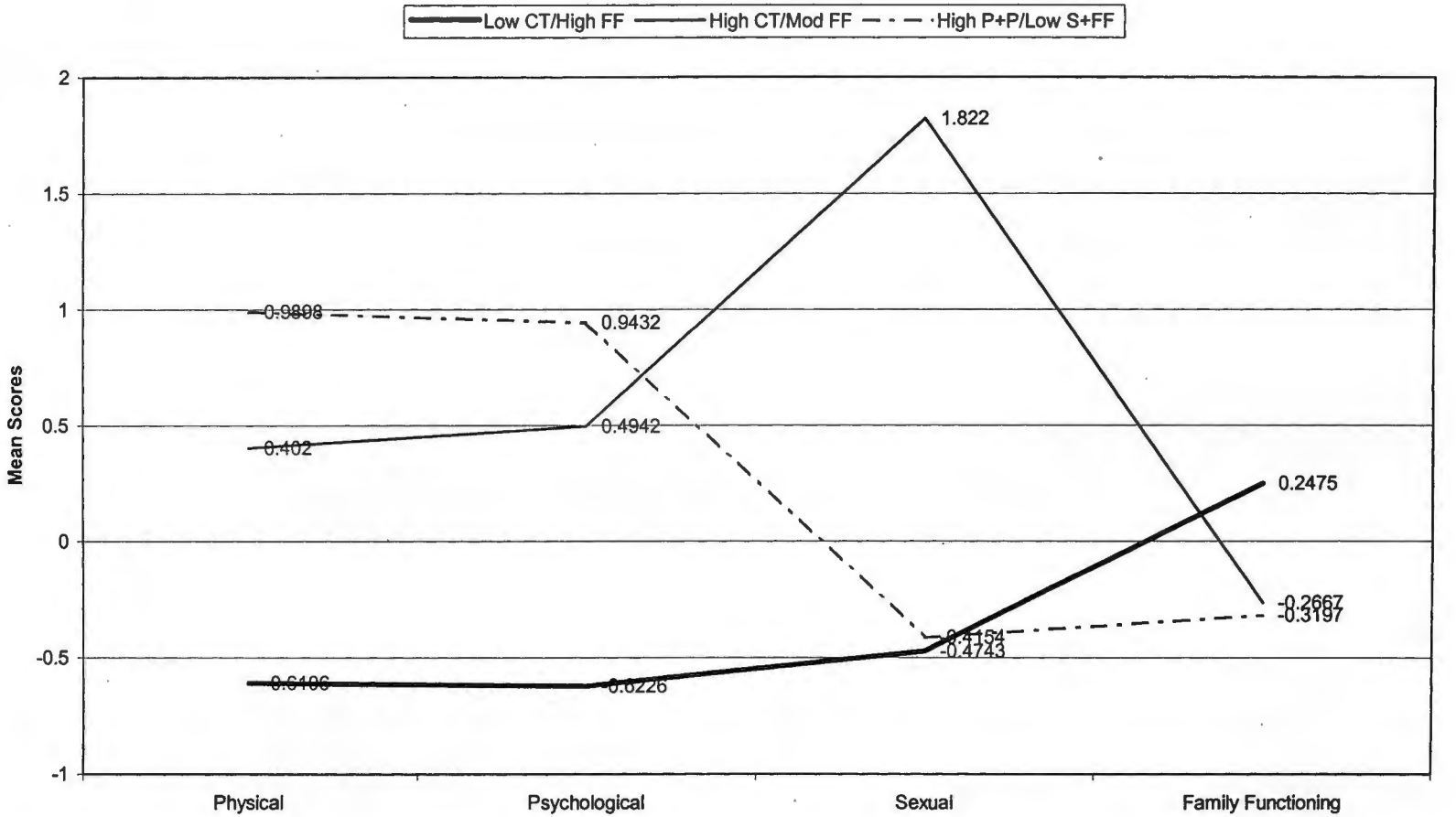

Figure 10: Standardized means for childhood physical abuse, childhood psychological abuse, childhood sexual abuse, and family functioning variables for 3 Cluster solution. N = 200 young female adults.

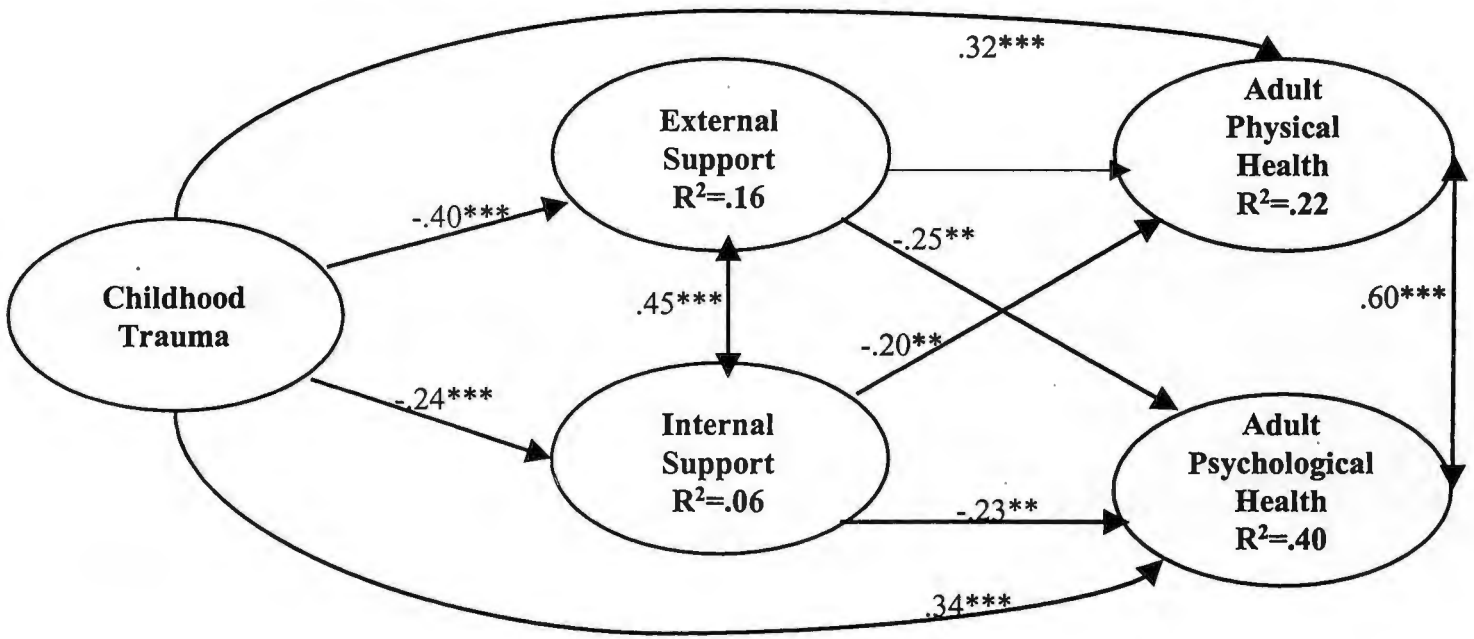

Figure 4: <u>Revised Model</u> of childhood trauma, external support, internal support, adult physical health, and adult psychological health with standardized maximum likelihood parameter estimates (*p<.05, **p<.01, ***p<.001). Non-bold lines are non-significant. X^2 (142)=574.22, CFI=.84 , AASR=.04, N=341 young female adults. All factor loadings significant at p<.001 or better.

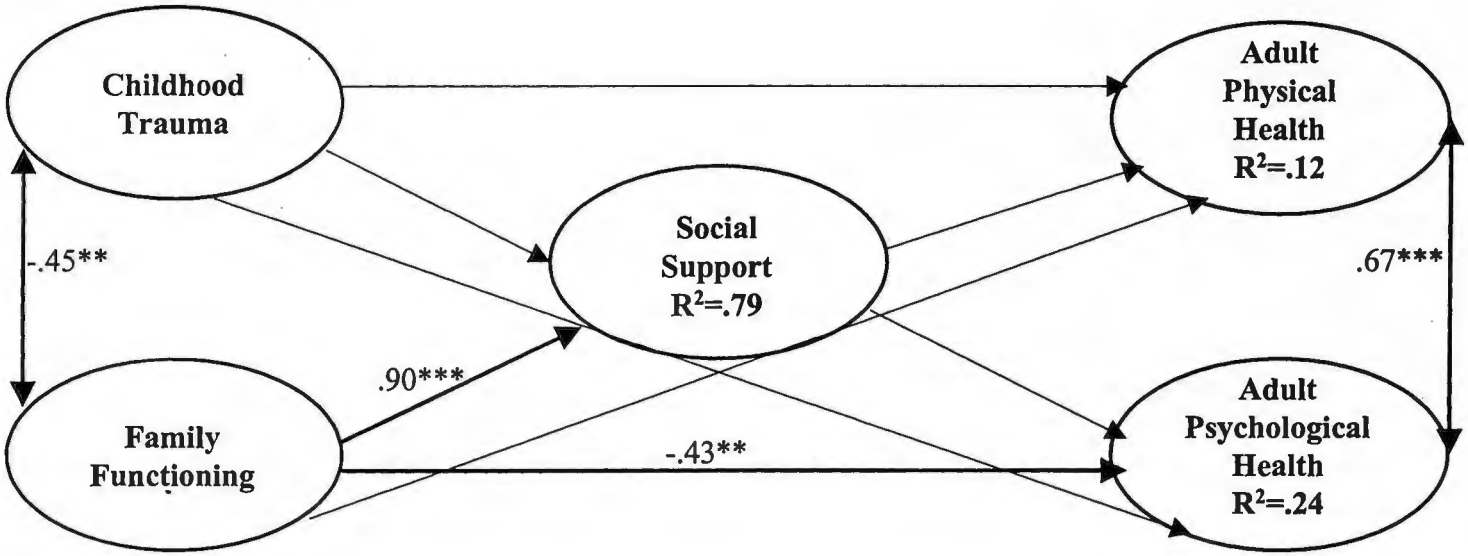

Figure 5: Full Model of childhood trauma, family functioning, social support, adult physical health, and adult psychological health with standardized maximum likelihood parameter estimates (*p<.05, **p<.01, ***p<.001). Non-bold lines are non-significant. X^2 (109)=239.87, CFI=.86 , AASR=.06, N=110 young male adults. All factor loadings significant at p<.001 or better.

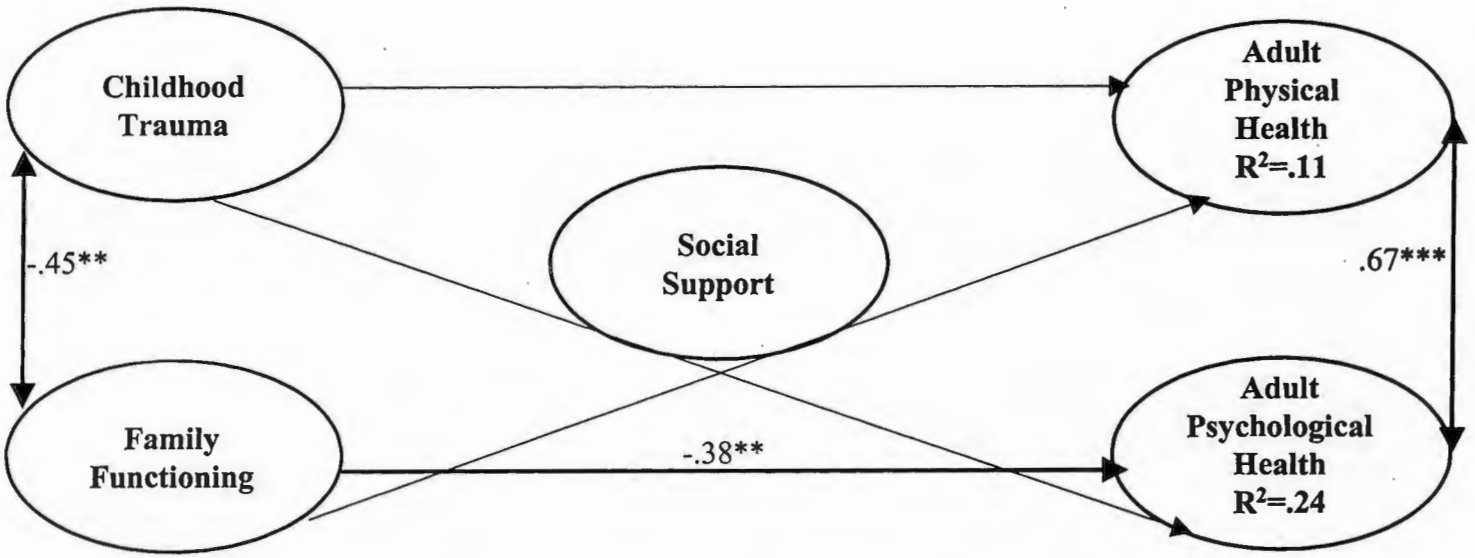

Figure 6: Direct Model of childhood trauma, family functioning, social support, adult physical health, and adult psychological health with standardized maximum likelihood parameter estimates (*p<.05, **p<.01, ***p<.001). Non-bold lines are non-significant. X^2 (113)=294.45, CFI=.80 , AASR=.10, N=110 young male adults. All factor loadings significant at p<.001 or better.

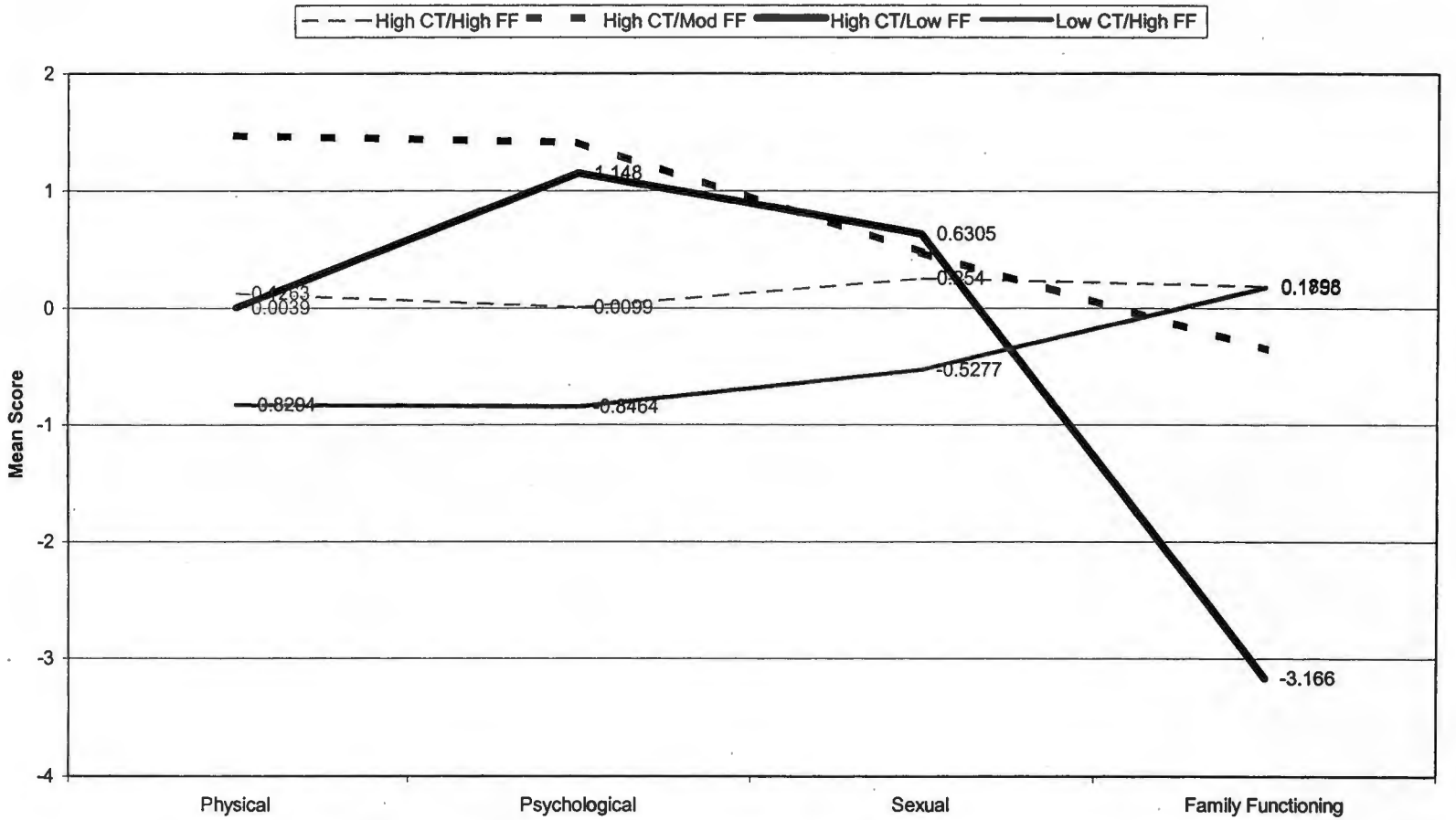

Figure 11: Standardized means for childhood physical abuse, childhood psychological abuse, childhood sexual abuse, and family functioning variables for 4 Cluster solution. N = 200 young female adults.

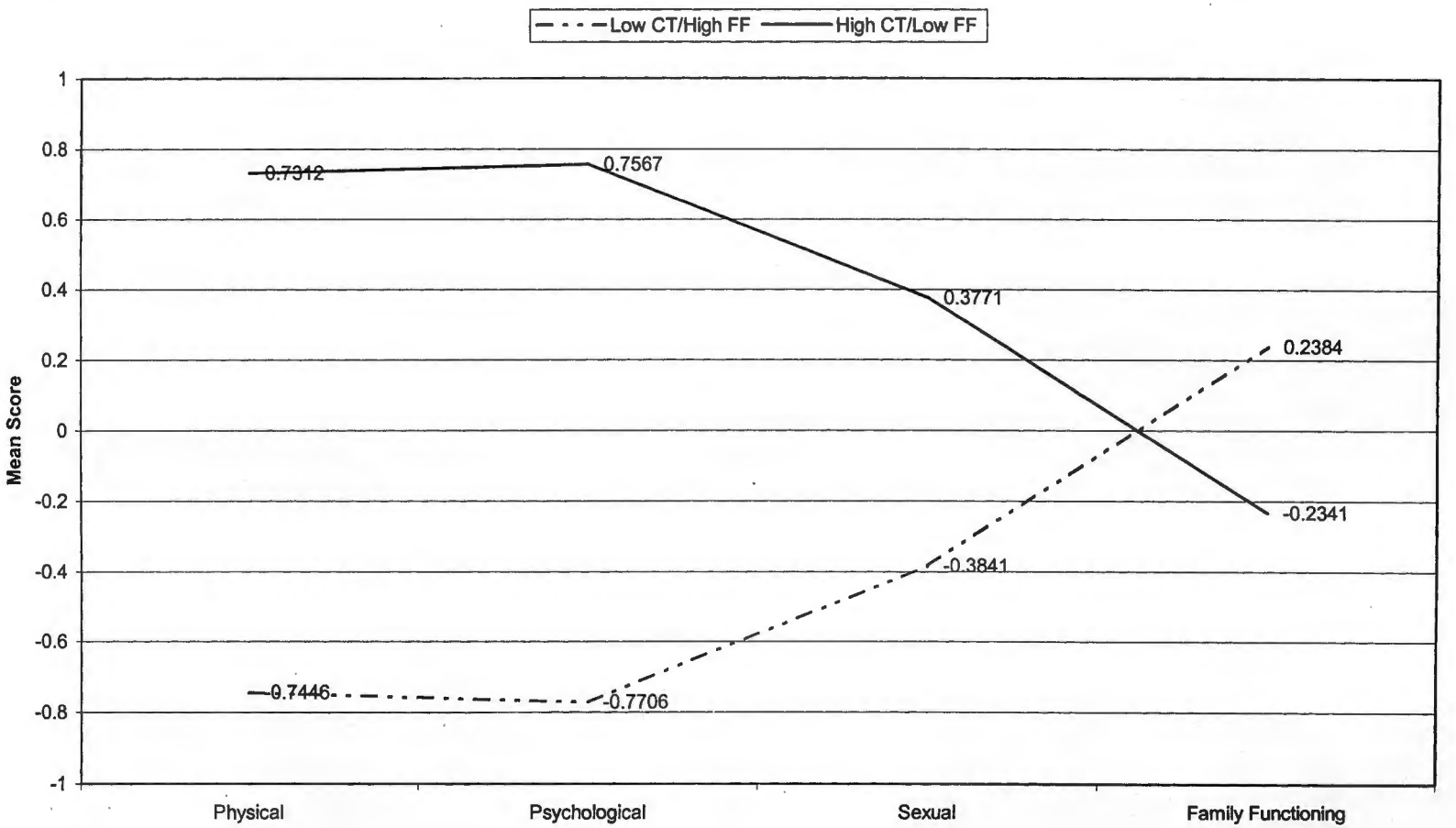

Figure 12: Standardized means for childhood physical abuse, childhood psychological abuse, childhood sexual abuse, and family functioning variables for 2 Cluster solution. N = 220 young adults.

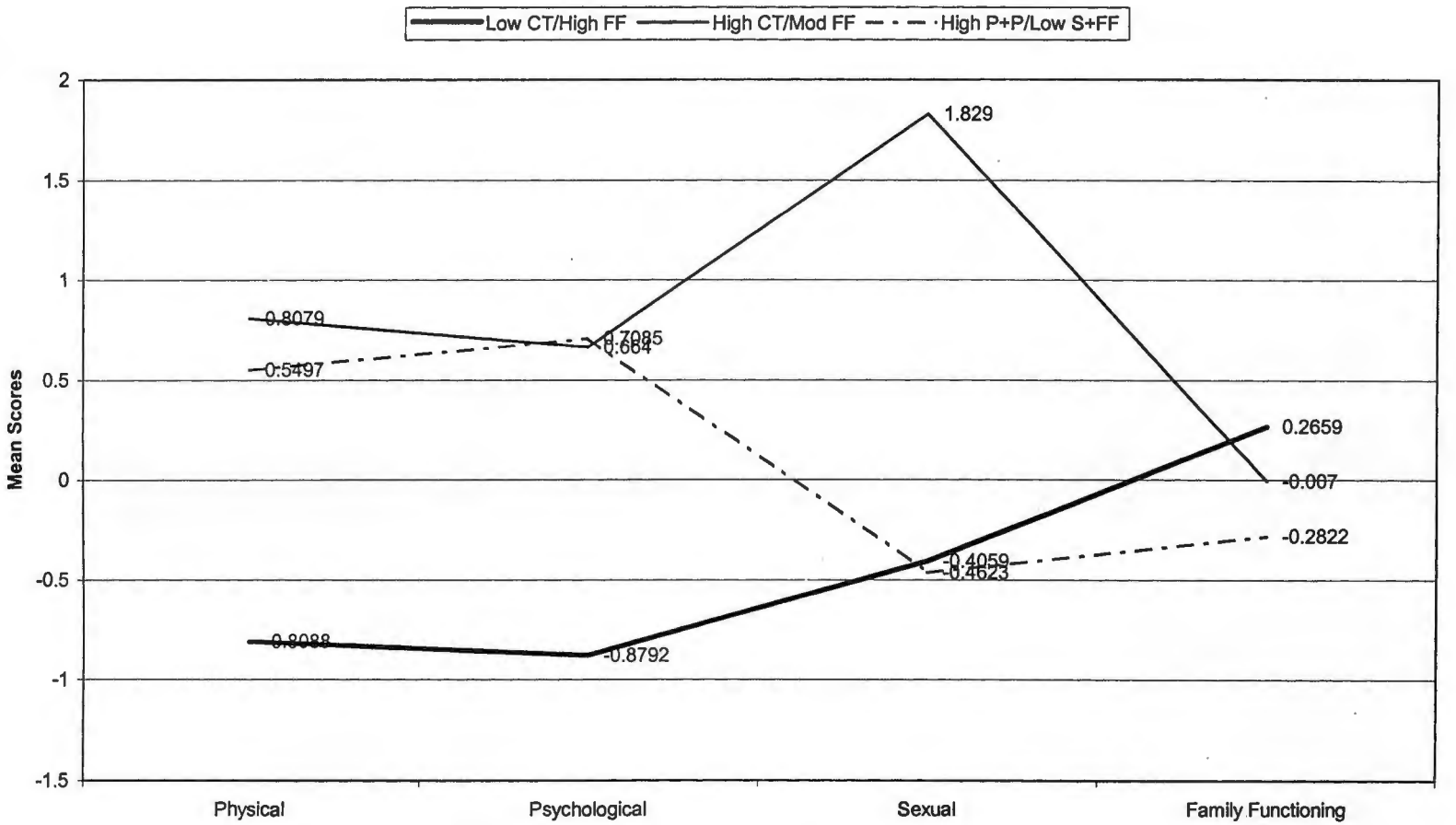

Figure 13: Standardized means for childhood physical abuse, childhood psychological abuse, childhood sexual abuse, and family functioning variables for 3 cluster solution. N = 220 young adults.

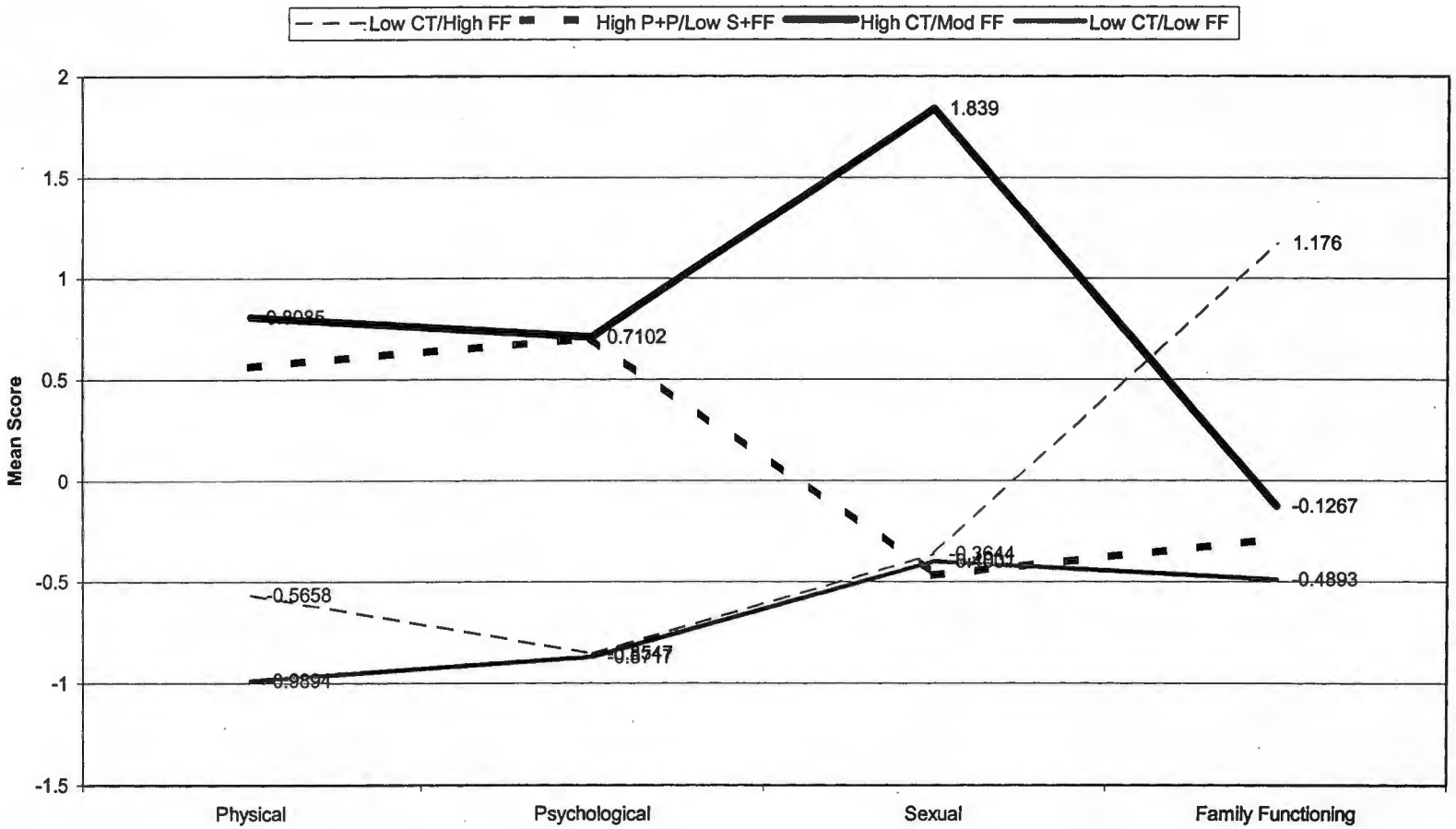

Figure 14: Standardized means for childhood physical abuse, childhood psychological abuse, childhood sexual abuse, and family functioning variables for 4 Cluster solution. N = 220 young adults.

APPENDIX A: INFORMED CONSENT

CONSENT FORM FOR RESEARCH
TITLE OF PROJECT: CHILDHOOD EXPERIENCES AND ADULT HEALTH

I have been asked to participate in the research project described below. **I realize that I must be at least 18 years old to be a participant in this research project.** The researcher will explain the project to me in detail. I should feel free to ask any questions. If I have more questions later, Jennifer Ann Morrow (401-874-5222) will discuss them with me.

I have been asked to take part in a study looking at the relationship between various events during childhood and adulthood health. There are no right or wrong answers. Some of the questions deal with sensitive topics such as physical, psychological, and sexual abuse as well as illnesses/diseases you have had in the past. There are also questions on spiritual practices and whom you turn to for help with your problems.

If I decide to take part in this study, my participation will involve filling out a questionnaire that will take approximately 30-45 minutes to complete.

I understand that I will be placed into a drawing after I have completed the survey from which I could win 1 of 2 $50 prizes. Winners of the two prizes will be notified by May 31, 2001.

My part in this study is anonymous and confidential. In no way will my answers on the questionnaire be linked back to me. My answers will **NEVER** have my name attached to them. My part in this study is up to me. I will not be forced to participate in this study, and I may quit the study at any time.

Although there will be no direct benefit to you for taking part in this study, the researcher may learn more about the link between childhood experiences and adult health. There are few, if any, risks from this study. I understand that the only potential risk is that the questionnaire contains some sensitive information about my childhood that may be upsetting. **If these questions are upsetting and you want to talk, please use the phone numbers below:**

Domestic Violence Hotline	1-800-494-8100
National Domestic/Abuse Hotline	1-800-799-7233
URI Counseling Center	401-874-2288
The Samaritans	401-272-4044

Participation in this study is not expected to be harmful or injurious to you. However, if this study causes me any injury or if I am not satisfied with the way this study is performed, I should contact Jennifer Ann Morrow at 874-5222 (email: jlan1323@postoffice.uri.edu) or Dr. Lisa L. Harlow at 874-4242 (email: Lharlow@uri.edu), anonymously if I choose. In addition, I may contact the office of the Vice Provost for Graduate Studies, Research and Outreach, 70 Lower College Road, Suite 2, University of Rhode Island, Kingston, Rhode Island, telephone: (401) 874-2635.

I have read the Consent Form. My questions have been answered. **My signature on this form means that I understand the information and I agree to participate in this study.**

_____ _____

Signature of Participant & Date Printed Name of Participant

_____ Jennifer Ann Morrow_____

Signature of Researcher & Date Printed Name of Researcher

-

Please fill in your name and how you wish for me to contact you regarding prize selection, should you win. (Please write legibly).

Name_____ Email_____

Phone___-___-_____

Address_____ City_____ State_____

Zipcode_____

APPENDIX B

DEBRIEFING SHEET FOR JENNIFER MORROW'S RESEARCH PROJECT – CHILDHOOD EXPERIENCES AND ADULT HEALTH

Thank you for participating in my research project! The purpose of this project was to look for relationships between childhood trauma (physical, psychological, and sexual abuse) and physical and psychological health problems as adults. I am also looking to see if spirituality and social support are helpful in weakening the relationship between childhood trauma and adult health. I anticipate that this project will be completed by May 2001. If you would like a copy of my final paper please feel free to contact me at:

Jennifer Ann Morrow
Department of Psychology
University of Rhode Island
Kingston, RI 02881
(401) 874-5222
jamorrow524@yahoo.com

Thanks again for your participation!!!!!

APPENDIX C: SURVEY

Table of Contents for Survey

CHILDHOOD EXPERIENCES AND ADULT HEALTH SURVEY

FAMILY FUNCTIONING

Directions: Please use the following scale to rate how each statement describes the family you grew up in (Before the age of 18). Use this scale for questions 1 – 23.

a = Never b = Almost never or rarely c = Sometimes d = Frequently or almost always e = Always

1. My family accepted me as I am
2. My family backed me up when I needed them
3. I felt like a stranger in my own house
4. People in my family did not care enough about what I needed
5. I felt respected by my family
6. People in my family listened to me when I spoke
7. My family was proud of me
8. Family members excluded me from their conversations
9. My family saw me as a hopeless case
10. I felt loved by my family
11. We talked about the rules that were made in my family
12. I told people in my family when I was angry with them
13. I let my family know when I was sad
14. When I had questions about sex, I asked family members for information
15. In my family, we talked about the physical changes that go along with growing up
16. In my family we talked about what was right and wrong with regard to sex
17. We had arguments about watching television
18. When I asked someone in my family to do something, I had to check to see that it was done
19. The children in my family fought with each other
20. People in my family had to be reminded when they were asked to do something
21. People in my family argued about doing household chores
22. Some member(s) of my family watched too much television
23. People in my family used my things without asking me first

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HEALTH-RELATED PROBLEMS

Directions: The next set of questions deals with health-related problems. Use the scale below for questions 24 - 30.

a = Never b = 1 – 2 times c = 3 – 4 times d = 5 - 6 times e = 7+ times

In the <u>past year</u> how often have you done the following:

24. Visited an emergency room
25. Visited a doctor/nurse
26. Visited a counselor/psychologist
27. Visited a health center/clinic
28. Filled a new prescription
29. Missed school/work because of illness
30. Stayed overnight in a hospital

RESILIENCY SCALE

Directions: Please use the following scale to rate how each statement reflects your attitude about yourself. Use the scale below for questions 31 – 55.

a = Strongly Disagree b = Disagree c = Agree d = Strongly Agree

31. When I make plans I follow through with them
32. I usually manage one way or another
33. I am able to depend on myself more than anyone else
34. Keeping interested in things is important to me
35. I can be on my own if I have to
36. I feel proud that I have accomplished things in my life
37. I usually take things in stride
38. I am friends with myself
39. I feel that I can handle many things at a time
40. I am determined
41. I seldom wonder what the point of it all is
42. I take things one day at a time
43. I can get through difficult times because I've experienced difficulty before
44. I have self-discipline
45. I keep interested in things
46. I can usually find something to laugh about
47. My belief in myself gets me through hard times
48. In an emergency, I'm someone people generally can rely on
49. I can usually look at a situation in a number of ways
50. Sometimes I make myself do things whether I want to or not
51. My life has meaning
52. I do not dwell on things that I can't do anything about
53. When I'm in a difficult situation, I can usually find my way out of it
54. I have enough energy to do what I have to do
55. It's okay if there are people who don't like me

COMMUNITY SUPPORT

Directions: The next set of questions deal with support from community members. Use the scale below to answer questions 56 – 63.

a = No one would do this b = Someone might do this c = Someone would probably do this d = Someone would certainly do this
e = Someone most certainly would do this

How likely would members of your community (teachers, neighbors, etc.) help you out when you had a problem, in each of the specific ways below:

56. would comfort me if I was upset
57. would joke around or suggest doing something to cheer me up
58. would listen if I needed to talk about my feelings
59. would give me advice about what to do
60. would give me a hug, or otherwise show me I was cared about
61. would tell me who to talk to for help
62. would be sympathetic if I was upset
63. would tell me about available choices and options

SPIRITUAL INVOLVEMENT AND BELIEFS

Directions: The next set of questions deal with spiritual involvement and beliefs. Use the scale below for questions 64 – 97.

a = Strongly Disagree b = Disagree c = Agree d = Strongly Agree

64. I set aside time for meditation and/or self-reflection
65. I can find meaning in times of hardship
66. A person can be fulfilled without pursuing an active spiritual life
67. I find serenity by accepting things as they are
68. Some experiences can be understood only through one's spiritual beliefs
69. I do not believe in an afterlife
70. A spiritual force influences the events in my life
71. I have a relationship with someone I can turn to for spiritual guidance
72. Prayers do not really change what happens
73. Participating in spiritual activities helps me forgive other people
74. I find inner peace when I am in harmony with nature
75. Everything happens for a greater purpose
76. I use contemplation for a greater purpose
77. My spiritual life fulfills me in ways that material possessions do not
78. I rarely feel connected to something greater than myself
79. In times of despair, I can find little reason to hope
80. When I am sick, I would like others to pray for me
81. I have a personal relationship with a power greater than myself
82. I have had a spiritual experience that greatly changed my life
83. When I help others, I expect nothing in return

84. I don't take time to appreciate nature
85. I depend on a higher power
86. I have joy in my life because of my spirituality
87. My relationship with a higher power helps me love others more completely
88. Spiritual writings enrich my life
89. I have experienced healing after prayer
90. My spiritual understanding continues to grow
91. I am right more often than most people
92. Many spiritual approaches have little value
93. Spiritual health contributes to physical health
94. I regularly interact with others for spiritual purposes
95. I focus on what needs to be changed in me, not on what needs to be changed in others
96. In difficult times, I am still grateful
97. I have been through a time of great suffering that led to spiritual growth

Use the scale below to answer questions 98 – 101.

a = Never b = Sometimes c = Usually d = Always

98. When I wrong someone, I make an effort to apologize
99. I accept others as they are
100. I solve my problems without using spiritual resources
101. I examine my actions to see if they reflect my values

PHYSICAL HEALTH PROBLEMS

Directions: The next set of questions deal with current physical health problems. Use the scale below to answer questions 102 – 128.

a = Never b = 1 - 2 times c = 3 - 4 times d = 5 - 6 times e = 7+ times

In the past year, how often have you had any of the following illnesses/conditions:

102. common cold
103. headaches
104. migraines/cluster headaches
105. ear infections
106. back pain
107. heart palpitations
108. sinus infections
109. flu
110. abdominal pain
111. high blood pressure
112. throat infections
113. sexually transmitted disease
114. broken bones

115. tightness in the chest
116. low blood pressure
117. urinary tract infections
118. asthma attack
119. ulcers
120. hay fever
121. facial pain
122. neck pain
123. weak or failing kidneys
124. liver condition
125. joint pain
126. leg pain
127. shortness of breath
128. alcohol or drug induced blackouts

Use the scale below for questions 129 + 130.

a = Poor b = Fair c = Good d = Excellent

129. In general, my physical health is:
130. In general, my mental health/emotional well-being is:

TRAUMA SYMPTOM CHECKLIST

Directions: Then next set of questions deal with emotional well-being. Use the following scale for questions 131 - 163.

a = Never b = Occasionally c = Fairly Often d = Often

In the <u>past year</u>, how often have you experienced the following:

131. insomnia (trouble getting to sleep)
132. restless sleep
133. nightmares
134. waking up early in the morning and can't get back to sleep
135. weight loss (without dieting)
136. feeling isolated from others
137. loneliness
138. low sex drive
139. sadness
140. "flashback" (sudden, vivid, distracting memories)
141. "spacing out" (going away in your mind)
142. headaches
143. stomach problems
144. uncontrollable crying
145. anxiety attacks
146. trouble controlling temper

147. trouble getting along with others
148. dizziness
149. passing out
150. desire to physically hurt yourself
151. desire to physically hurt others
152. sexual problems
153. sexual over activity
154. fear of men
155. fear of women
156. unnecessary or over-frequent washing
157. feelings of inferiority
158. feelings of guilt
159. feelings that things are "unreal"
160. memory problems
161. feelings that your are not always in your body
162. feeling tense all the time
163. having trouble breathing

FAMILY SUPPORT

Directions: The next set of questions deal with support from family members. Use the scale below to answer questions 164 - 171.

a = No one would do this b = Someone might do this c = Someone would probably do this d = Someone would certainly do this
e = Someone most certainly would do this

How likely would members of your family (parents, siblings, aunts, cousins, etc.) help you out when you had a problem, in each of the specific ways below:

164. would comfort me if I was upset
165. would joke around or suggest doing something to cheer me up
166. would listen if I needed to talk about my feelings
167. would give me advice about what to do
168. would give me a hug, or otherwise show me I was cared about
169. would tell me who to talk to for help
170. would be sympathetic if I was upset
171. would tell me about available choices and options

PEER SUPPORT

Directions: The next set of questions deal with support from friends. Use the scale below to answer questions 172 - 179.

a = No one would do this b = Someone might do this c = Someone would probably do this d = Someone would certainly do this
e = Someone most certainly would do this

How likely would your friends help you out when you had a problem, in each of the specific ways below:

172. would comfort me if I was upset
173. would joke around or suggest doing something to cheer me up
174. would listen if I needed to talk about my feelings
175. would give me advice about what to do
176. would give me a hug, or otherwise show me I was cared about
177. would tell me who to talk to for help
178. would be sympathetic if I was upset
179. would tell me about available choices and options

CHILDHOOD EXPERIENCES

Directions: The next set of questions deal with experiences during childhood. Use the following scale for questions 180 – 211.

a = Never b = Once c = A Few Times d = Many Times

Before you were 18 years old, Did anyone ever do the following:

CHILDHOOD PHYSICAL ABUSE

180. kick, bite, or punch you
181. slap you
182. beat you up
183. hit you with something
184. choke or strangle you
185. slam you against the wall
186. grab you
187. throw something at you that could hurt
188. use a knife or gun on you
189. push or shove you
190. twist your arm or hair
191. burn or scald you on purpose
192. cause some other type of bodily injury

CHILDHOOD PSYCHOLOGICAL ABUSE

193. insult or swear at you
194. shout at you
195. stomp out of the room while with you
196. threaten to hit or throw something at you
197. destroy something of yours
198. do something to spite you
199. put down your physical appearance
200. treat you like you were stupid

201. was jealous or suspicious of your friends
202. blame you for their problems
203. treat you like you were inferior
204. did not allow you to go to school or work

CHILDHOOD SEXUAL ABUSE

205. show their genitals to you
206. touch their genitals in front of you
207. touch your breasts or genitals
208. try to make you touch their genitals
209. rub their genitals against your body
210. **try** to put his penis in your mouth, vagina, or rectum
211. **put** his penis in your mouth, vagina, or rectum

Directions: If you answered b, c, or d to any of the previous questions, this is considered abuse. We will now use the term 'abuse' in some of the following questions.

212. How many times did these types of abuse occur?
    (a) was never abused
    (b) only once
    (c) only a few times
    (d) many times
    (e) weekly or daily

213. How old were you when the abuse began?
    (a) was never abused
    (b) 0 to 6 years old
    (c) 7 to 12 years old
    (d) 13 to 18 years old
    (e) older than 18 years old

214. How old were you when the abuse stopped?
    (a) was never abused
    (b) 0 to 6 years old
    (c) 7 to 12 years old
    (d) 13 to 18 years old
    (e) it is still going on

Directions: Use the scale below to answer questions 215 – 224.

a = Yes **b = No** **c = Was never abused**

Who were the people who did these things listed in the previous set of questions:

215. a stranger
216. a member of my immediate family (mother, father, brother, etc.)
217. a member of my extended family (aunt, uncle, cousin, etc.)
218. a friend
219. other

If you told anyone that this abuse occurred, who were they?

220. a stranger
221. a member of my immediate family (mother, father, brother, etc.)
222. a member of my extended family (aunt, uncle, cousin, etc.)
223. a friend
224. other

DEMOGRAPHICS

DIRECTIONS: For this set of questions, please circle the answer that is best for you or fill in the blanks.

225. What is your Race or Ethnic group?
1 = White/Caucasian
2 = Black or African-American
3 = Alaskan Native or Native American
4 = Asian-American or Pacific Islander
5 = Hispanic
6 = Other

226. How old are you?
1 = 18 years old
2 = 19 years old
3 = 20 years old
4 = 21 years old
5 = Other (please specify) _____

227. What is the most recent grade in school you have completed?
1 = Did not finish 8th grade
2 = Some high school
3 = Graduated from high school
4 = Some college work
5 = Graduated from college
6 = Graduate degree or coursework

228. Are you currently enrolled in college?
1 = Yes If Yes, are you: 1 = Full-time 2 = Part-time
2 = No

229. What is your living situation?

1 = I live in on-campus housing
2 = I live in a Fraternity/Sorority house
3 = I live in my own house/apartment
4 = I live with my parents/guardians
5 = other

230. What is your household income (your income and parent's income - if they financially support you)?
1 = Less than $10,000
2 = $10,000 to 19,999
3 = $20,000 to 34,999
4 = $35,000 to 50,000
5 = over $50,000
6 = Don't Know

231. What is your religion?
1 = Catholic
2 = Protestant
3 = Jewish
4 = Muslim
5 = Eastern
6 = Other
7 = None

232. What is your marital status?
1 = Single, never married
2 = Married
3 = Separated or divorced
4 = Widowed

233. What is your sex?
1 = Female
2 = Male

BIBLIOGRAPHY

Aldenderfer, M.S., & Blashfield, R.K. (1984). Cluster Analysis. Thousand Oaks, CA: Sage Publications.

Amerikaner, M., Monks, G., Wolfe, P., & Thomas, S. (1994). Family interaction and individual psychological health. Journal of Counseling and Development, 72, 614-620.

Arnow, B.A., Hart, S., Scott, C., Dea, R., O'Connel, L., & Taylor, C.B. (1999). Childhood sexual abuse, psychological distress, and medical use among women. Psychosomatic Medicine, 61, 762-768.

Barrera, M., & Garrison-Jones, C. (1992). Family and peer social support as specific correlates of adolescent depressive symptoms. Journal of Abnormal Child Psychology, 20, 1-16.

Beautrais, A., Fergusson, D.M., & Shannon, F.T. (1982). Life events and childhood morbidity: A prospective study. Pediatrics, 70, 935-940.

Bentler, P.M. (1989). Latent variable structural models for separating specific from general effects. In L. Sechrest, J. Bunker, & E. Perrin (Eds.), Improving methods in non-experimental research. Newbury Park, CA: Sage Publications.

Bentler, P.M. (1990). Comparative fit indexes in structural models. Psychological Bulletin, 107, 238-246.

Bentler, P.M. (1995). EQS Structural Equations Program Manual. Encino, CA: Multivariate Software, Inc.

Berkowitz, C.D. (2000). The long-term medical consequences of sexual abuse. In Reece, R.M. (Ed.), Treatment of child abuse: Common ground for mental health, medical, and legal practitioners. Baltimore, MD: John Hopkins University Press.

Briere, J. & Runtz, M. (1989). The trauma symptom checklist (TSC-33): Early data on a new scale. Journal of Interpersonal Violence, 4(2), 151-163.

Briere, J. & Runtz, M. (1990). Differential adult symptomatology associated with three types of child abuse histories. Child Abuse and Neglect, 14, 357-364.

Browne, A. & Finkelhor, D. (1986). Impact of child sexual abuse: A review of the research. Psychological Bulletin, 99, 66-77.

Carbonell, D.M.; Reinherz, H.Z. & Giaconia, R.M. (1998). Risk and resilience in late adolescence. Child and Adolescent Social Work Journal, 15(4), 251-272.

Coker, A.L., Smith, P.H., Bethea, L., Remsburg, M.J. & McKeown, R.E. (1999). Physical health consequences of non-physical intimate partner violence. Manuscript submitted for publication.

Cohen, J. (1992). A power primer. Psychological Bulletin, 112, 155-159.

Cohen, L.H., McGowan, J., Fooskas, S., & Rose, S. (1984). Positive life events and social support and the relationship between life stress and psychological disorder. American Journal of Community Psychology, 12, 567-587.

Cohen, S., Tyrrell, D.A.J., & Smith, A. (1993). Negative life events, perceived stress, negative affect, and susceptibility to the common cold. Journal of Personality and Social Psychology, 64(1), 131-140.

Cohen, S. & Williamson, G. (1991). Stress and infectious disease in humans. Psychological Bulletin, 109, 5-24.

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 297-334.

Cummins, J.R.C., Ireland, M., Resnick, M.D., & Blum, R.W. (1999). Correlates of physical and emotional health among Native American adolescents. Journal of Adolescent Health, 24, 38-44.

Cunningham, J., Pearce, T., & Pearce, P. (1988). Childhood sexual abuse and medical complaints in adult women. Journal of Interpersonal Violence, 3(2), 131-144.

Dienemann, J., Boyle, E., Baker, D., Resnick, W., Wiederhorn, N., & Campbell, J. (2000). Intimate partner abuse among women diagnosed with depression. Issues in Mental Health Nursing, 21, 499-513.

Ellison, C.G., & Levin, J.S. (1998). The religion health connection: Evidence, theory, and future directions. Health Education and Behavior, 25, 700-720.

Everitt, B. (1980). Cluster Analysis. New York: Halsted.

Fellitti, V.J. (1991). Long-term medical consequences of incest, rape, and molestation. Southern Medical Journal, 84, 328-331.

Frankel, B.G., & Hewitt, W.E. (1994). Religion and well-being among Canadian university students: The role of faith groups on campus. Journal of the Scientific Study of Religion, 33, 62-73.

Frankl, V.E. (1959). Man's search for meaning: An introduction to logotherapy. Boston, MA: Beacon.

Franks, P., Campbell, T.L. & Shields, C.G. (1992). Social relationships and health: The relative roles of family functioning and social support. Social Science Medicine, 34(7), 779-788.

Fromuth, M.E. (1986). The relationship of childhood sexual abuse with later psychological and sexual adjustment in a sample of college women. Child Abuse & Neglect, 10, 5-15.

Garmezy, N. (1981). Children under stress: Perspectives on antecedents and correlates of vulnerability and resistance to psychopathology. In: Rabin, A., Aronoff, J., Barclay, A.M., Zucker, R.A., eds. Further Explorations in Personality. New York: Wiley, pp. 196-269.

Garmezy, N. (1991). Resilience in children's adaptation to negative life events and stressed environments. Pediatric Annals, 20, 459-466.

Golding, J.M.; Stein, J.A., Siegel, J.M., Burnam, M.A., & Sorenson, S.B. (1988). Sexual assault history and use of health and mental health services. American Journal of Community Psychology, 6, 625-644.

Golding, J.M. (1999). Intimate partner violence as a risk-factor for mental disorders: A meta-analysis. Journal of Family Violence, 14(2), 99-132.

Gondolf, E.W. & Fisher, E.R. (1988). Battered women as survivors. Lexington, MA: Lexington Books.

Grimm, L.G., & Yarnold, P.R. (2000). Reading and understanding more multivariate statistics. Washington, D.C.: American Psychological Association.

Hage, S.M. (1998, March) Charting a new course among women who are battered: Spirituality as a source of strength and survival. Paper presented at the meeting of the Association for Women in Psychology, Baltimore, MD.

Harlow, L.L. (1985). Behavior of some elliptical theory estimators with nonnormal data in a covariance structures framework: A Monte Carlo study. Unpublished doctoral dissertation. University of California, Los Angeles.

Harlow, L.L. (1991). Structural Equation Modeling: A conceptual approach. Distributed at a Structural Modeling Workshop, Central Connecticut State University, New Britian, CT (March, 1991).

Harlow, L.L., Rose, J.S., Morokoff, P.J., Quina, K., Mitchell, K., & Schnoll, R. (1998). Women HIV sexual risk takers: Related behaviors, interpersonal issues & attitudes. Women's Health: Research on Gender Behavior and Policy, 4, 407-439.

Harris, R.C., Dew, M.A., & Lee, A. (1995). The association of social relationships and activities with mortality: Prospective evidence from the Tecumseh Community Health Study. American Journal of Epidemiology, 116, 123-140.

Hatch, R.L., Burg, M.A., Naberhaus, D.S., & Hellmich, L.K. (1998). The spiritual involvement and beliefs scale: Development and testing of a new instrument. The Journal of Family Practice, 46(6), 476-486.

Hathaway, J.E., Mucci, L.A., Silverman, J.G., Brooks, D.R., Mathews, R., & Pavlos, C.A. (2000). Health status and health care use of Massachusetts women reporting partner abuse. American Journal of Preventive Medicine, 19, 302-307.

Hauser, S.T., Vieyra, M.A.B., Jacobson, A.M., & Wertlieb, D. (1985). Family aspects of vulnerability and resilience in adolescence: A theoretical perspective. In Dugan, T. & Coles, R. (Eds.), The child in our times: Studies in the development of resiliency, New York: Brunner/Mazel Publishers.

Hoover, S.A., Murphy, C.M, & Taft, C.T. (1999). Gender differences in reporting, perpetration, and correlates of emotional abuse. Paper presented at the Family Violence Research Conference, Durham, New Hamphire.

House, J.S., Robbins, C., & Metzner, H.L. (1982). The association of social relationships and activities with mortality: Prospective evidence from the Tecumseh Community Health Study. American Journal of Epidemiology, 116, 123-140.

Hoyle, R.H. (1995). Structural equation modeling: Concepts, issues, and applications. Thousand Oaks: Sage Publications.

Hu, L., & Bentler, P.M. (1995). Evaluating model fit. In Hoyle (Ed), Structural equation modeling: Concepts, issues, and applications (pp. 76-99). Thousand Oaks: Sage Publications.

Jaffe, P.; Wolfe, D.A.; Wilson, S. & Zak, L. (1986). Emotional and physical health problems of battered women. Canadian Journal of Psychiatry, 31, 625-629.

Johnson, L.W., & Harlow, L.L. (1996). Childhood sexual abuse linked with adult substance use, victimization, and AIDS risk. AIDS Education and Prevention, 8, 44-57.

Kachigan, S.K. (1991). Multivariate Statistical Analysis: A conceptual introduction. (2nd edition). New York, New York: Radius Press.

Kendall-Tackett, K.A.; Williams, L.M. & Finkelhor, D. (1993). Impact of sexual abuse on children: A review and synthesis of recent empirical studies. Psychological Bulletin, 113, 164-180.

Kim, J.O., & Mueller, C.W. (1978). Factor analysis: Statistical methods and practical issues. Thousand Oaks: Sage Publications.

Koenig, H.G. (1997). Is religion good for your health? Effect of religion on mental and physical health. New York: Haworth.

Koss, M.P., Koss, P.G., & Woodruff, W.J. (1991). Deleterious effects of criminal victimization on women's health and medical utilization. Archives of Internal Medicine, 151, 342-347.

Lam, J.N. & Grossman, F.K. (1997). Resiliency and adult adaptation in women with and without self-reported histories of childhood sexual abuse. Journal of Traumatic Stress, 10(2), 175-196.

Larson, D.B., Swyers, J.P., & McCullough, M.E. (Eds.). (1998). Scientific research on spirituality and health: A consensus report. Rockville, MD: National Institute.

Licitra-Kleckler, D.M., & Waas, G.A. (1993). Perceived social support among high-stress adolescents: The role of peers and family. Journal of Adolescent Research, 8, 381-402.

Liem, J.H., James, J.B., O'Toole, J.G., & Boudewyn, A.C. (1997). Assessing resilience in adults with histories of childhood sexual abuse. American Journal of Orthopsychiatry, 67(4), 594-606.

Maccoby, E.E., & Jacklin, C.N. (1974). The psychology of sex differences. Stanford, CA: Stanford University Press.

Maruyama, G.M. (1998). Basics of structural equation modeling. Thousand Oaks, CA.: Sage Publications.

Mason, J. (1996). Qualitative researching. Thousand Oaks, CA: Sage Publications.

Masten, A. & Garmezy, N. (1985). Risk, vulnerability, and protective factors on developmental psychopathology. In: Lahey, B., Kazedin, A., eds. Advances in Child Psychology, pp. 1-52. New York: Plenum..

Mitchell, K.J. (1998). Childhood sexual abuse and family functioning linked with eating and substance misuse: Mediated structural models. Unpublished doctoral dissertation. University of Rhode Island, Kingston, RI.

Morrow, J.A. (1998). The path to resiliency: Women's own voices. Unpublished manuscript.

Musick, M.A., Traphagan, J.W., Koenig, H.G., & Larson, D.B. (2000). Spirituality in physical health and aging. Journal of Adult Development, 7, 73-86.

O'Connell Higgens, G. (1994). Resilient adults: Overcoming a cruel past. San Francisco, CA: Jossey-Bass Publishers.

O'Sullivan, C.M. (1991). The relationship between childhood mentors and resiliency in adult children of alcoholics. Family Dynamics of Addiction Quarterly, 1(4), 46-59.

Papadopoulos, L. (1995). The impact of illness on the family and the family's impact on illness. Counseling Psychology Quarterly, 8(1), 27-34.

Read, J. (1999). Health promoting behaviors in women with and without sexual assault histories. Unpublished doctoral dissertation. University of Rhode Island, Kingston, RI.

Reinert, D.F., & Smith, C.E. (1997). Childhood sexual abuse and female spiritual development. Counseling and Values, 41, 235-245.

Resnick, H.S., Acierno, R., & Kilpatrick, D.G. (1997). Health impact of interpersonal violence 2: Medical and mental health outcomes. Behavioral Medicine, 23, 65-78.

Romesburg, H.C. (1990). Cluster Analysis for Researchers. Malabar, Florida: Robert E. Krieger Publishing Company.

Roesler, T.A., & McKenzie, N. (1994). Effects of childhood trauma on psychological functioning in adults sexually abused as children. The Journal of Nervous and Mental Disease, 182, 145-150.

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. American Journal of Orthopsychiatry, 57(3), 316-331.

Rutter, M. (1993). Resilience: Some conceptual considerations. Journal of Adolescent Health, 14, 690-696.

Sanders, B., & Giolas, M.H. (1991). Dissociation and childhood trauma in psychologically disturbed adolescents. American Journal of Psychiatry, 148, 50-54.

Shuler, P.A., Gelberg, L., & Brown, M. (1994). The effects of spiritual/religious practices on psychological well-being among inner city homeless women. Nurse Practitioner Forum, 5, 106-113.

Seligman, M.E.P. (1975). Helplessness: On depression, development, and death. San Francisco: W.H. Freeman.

Spiegel, D., Bloom, J.R., & Kraemer, H.C. (1989). Effect of psychosocial treatment on survival of patients with metastatic breast cancer. Lancet, 142, 888-891.

SPSS Base 8.0 Applications Guide. (1998). Chicago, IL: SPSS Inc.

Straus, M.A., & Gelles, R.J. (1995). Physical violence in American families: Risk factors and adaptations to violence in 8,145 families. New Brunswick: Transaction Publishers.

Straus, M.A., Hamby, S.L., Boney-McCoy, S., & Sugarman, D.B. (1996). The Revised Conflict Tactics Scales (CTS2). Journal of Family Issues, 17(3), 283-316.

Tabachnick, B.G., & Fidell, L.S. (1996). Using multivariate statistics. (3rd edition). California: Harper Collins.

Taylor, S.E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. American Psychologist, 38, 1161-1173.

Taylor, S.E., Kemeny, M.E., Reed, G.M., Bower, J.E., & Gruenewald, T.L. (2000). Psychological resources, positive illusions, and health. American Psychologist, 55, 99-109.

Tavitian, M.L., Lubiner, J., Green, L., Grebstein, L.C., & Velicer, W.F. (1987). Dimensions of family functioning. Journal of Social Behavior and Personality, 2(2), 191-204.

Thakkar, R.R., & McCanne, T.R. (2000). The effects of daily stressors on physical health in women with and without a childhood history of sexual abuse. Child Abuse & Neglect, 24, 209-221.

Thoresen, C. (1999). Spirituality and Health: Is there a relationship? Journal of Health Psychology, 4, 291-300.

Vaux, A., Riedel, S., & Stewart, D. (1987). Modes of social support: The social support behaviors (SS-B) scale. American Journal of Community Psychology, 15(2), 209-237.

Wagnild, G.M. & Young, H.M. (1993). Development and psychometric evaluation of the resilience scale. Journal of Nursing Measurement, 1(2), 165-178.

Walker, L. (1979). The battered woman. New York: Harper and Row.

Walker, E.A., Unutzer, J., Rutter, C., Gelfand, A., Saunders, K., VonKorff, M., Koss, M.P., & Katon, W. (1999). Costs of health care use by women HMO members with a history of childhood abuse and neglect. Archives of General Psychiatry, 56, 609-613.

Werner, E.E. (1988). Individual differences, universal needs: A 30-year study of resilient high risk infants. Zero to Three, 8(4), 1-5.

Werner, EE. (1989). High-risk children in young adulthood: A longitudinal study from birth to 32 year. American Journal of Orthopsychiatry, 59, 72-81.

Werner, EE. & Smith, R.S. (1992). Overcoming the odds: High risk children from birth to adulthood. Ithaca, NY: Cornell University Press.

Whitmire, L.E., Harlow, L.L., Quina, K., & Morokoff, P.J. (1999). Childhood Trauma and HIV: Women at Risk. Philadelphia, PA: Taylor & Francis.

Wyatt, G.E. (1985). The sexual abuse of Afro-American and White American women in childhood. Child Abuse and Neglect, 10, 231-240.